

THE RALEIGH AMATEUR RADIO SOCIETY



PRESENTS

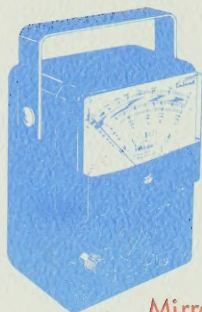
THE 1970 ARRL Roanoke Division CONVENTION

October 31–November 1, 1970

The Hilton Inn
Raleigh, North Carolina

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Mirrored scale eliminates parallax...a necessity for transistor circuits. Overload protected. 27 ranges.

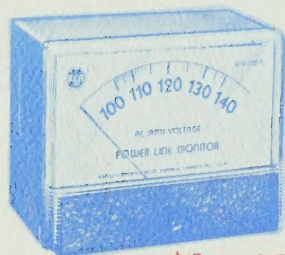


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Volumetric Ceramic
MOBILE MIKE
Push-to-talk circuit.
Hi impedance
300-3000 cps.

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Tests in and out of circuit. Identifies PNP & NPN types.



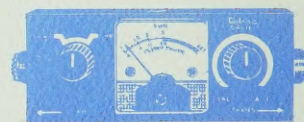
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RCA Power Line
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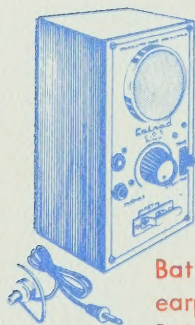
Continuous, accurate reading of 120-volt AC line voltage. Expanded 2-color scale.

Standing
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SWR 1:1 to 1:10
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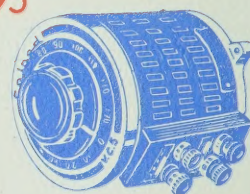
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Variable Voltage
REGULATOR

Output variable from 0-130 volts.
Input 115 volts @ 5 amps 60 cps.

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Division
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JOHN HUNTOON, W1RW
Secretary and General Manager
American Radio Relay League
and Editor of QST Magazine

VIC CLARK, W4KFC
Director, Roanoke Division
American Radio Relay League



CLUB HISTORY

RALEIGH AMATEUR RADIO SOCIETY, INC.

Just a short twenty months ago, the Raleigh Amateur Radio Society was a small neighborhood gathering for some "ham-talk" and a chance for the XYL's to get to know each other better. While talking it up over the air, it was realized that interest was being generated, not only in one area, but all over the city and the county. It was evident that a well organized and logically planned club was a needed thing. Therefore, the Raleigh Amateur Radio Society was incorporated on February 12, 1969 with its chief purpose being to further the interests of ALL amateurs in the area. Realizing that it is difficult to be all things to all hams, particularly when there are so many divergent specialties within the hobby as a whole, it was felt that by working in broad interest areas, new acquaintances and close kinships could be developed whereby hams could learn to call on one another for ideas and assistance using the RARS as the communications medium. To insure that the new club adhere to its set policies and to provide the leadership necessary in an undertaking of this magnitude, an executive and advisory committee was formed, its members being drawn from the board of directors, officers, and incorporators. The success of the RARS to date is due largely to the efforts of the executive and advisory committee and the enthusiasm of its members.

From a modest beginning with fourteen incorporators, the ranks of the Raleigh Amateur Radio Society have grown to over sixty dues-paying members. At least one new member is accepted at almost every meeting. Attendance has been averaging between fifty and fifty-five at each of the monthly meetings and out-of-town visitors are becoming the rule rather than the exception. Credit for this remarkable attendance record is duly deserved by the Program Committee, who actively pursue interesting, timely, and entertaining subjects for presentation.

In May, 1969 the Raleigh Amateur Radio Society became affiliated with the American Radio Relay League.

Accomplishments of the RARS to date include the following: over 60 dues-paying members; TVI committee actively solving ham TVI problems; meeting public service requests; regular novice training classes; regular license upgrading classes; publishing of a regular monthly newsletter with excellent state-wide distribution and out-of-state distribution; establishment of an informal 2 meter FM net in the Raleigh area with some twenty-five to thirty active participants; hosted a state-wide meeting in Raleigh featuring Vic Clark, W4KFC, ARRL Roanoke Division Director; participated in both Field Days since incorporation with good scores, excellent participation, and good radio, TV, and newspaper publicity; and sponsoring the 1970 ARRL Roanoke Division Convention.

In October, 1969 the RARS requested "Amateur Radio Week In North Carolina" from Governor Robert W. Scott. As a result, the Governor proclaimed the week of November 17-November 23 as the FIRST "Amateur Radio Week In North Carolina" with an on-the-air announcement (75 meters) from the Governor's office including a reading of the official proclamation.

In the coming months, the RARS plans to continue its outstanding performance. Planned activities include a state-wide North Carolina QSO party on November 7 and 8, establishment of a 2 meter repeater station for the Raleigh area, and many other activities still in the early planning stages. Needless to say, these accomplishments have required, and will continue to require, lots of "ham power" and enthusiasm. The RARS has been fortunate and very proud to receive 100% cooperation from all its members.

RALEIGH AMATEUR RADIO SOCIETY, INC.
Post Office Box 12541
Raleigh, North Carolina 27605

Welcome,

In behalf of the Raleigh Amateur Radio Society, we welcome each of you to our city and the Roanoke Division Convention of the American Radio Relay League. We trust your visit with us will be an enjoyable one.

The Convention Committee has made every effort to provide an interesting and informative program for everyone. Meetings have been scheduled to provide an interest for each individual.

If you have the opportunity at some time, we invite you to visit our club meetings the first Wednesday in each month at 7:30 p.m. in the Civil Defense Headquarters on Jones Street.

We sincerely hope that your stay will be a pleasant one and that you will enjoy the convention activities. May your return trip home be a safe one. Do return to visit with us soon.

Ed

Ed Alderman, WA4PEN
President
Raleigh Amateur Radio Society

COMPLIMENTS of RALEIGH'S



NORTH HILLS
SHOPPING CENTER

OFF BELTLINE, EXIT SIX FORKS ROAD

Freck Radio & Supply Co., Inc.

38 Biltmore Avenue

Asheville, N. C. 28801

Welcome Amateur Radio Operators and their wives to this fine Convention where a great meeting of minds will take place to improve and to enhance the Radio Amateur's position in the Radio Spectrum as it applies to the great art of Communication in the U.S.A.

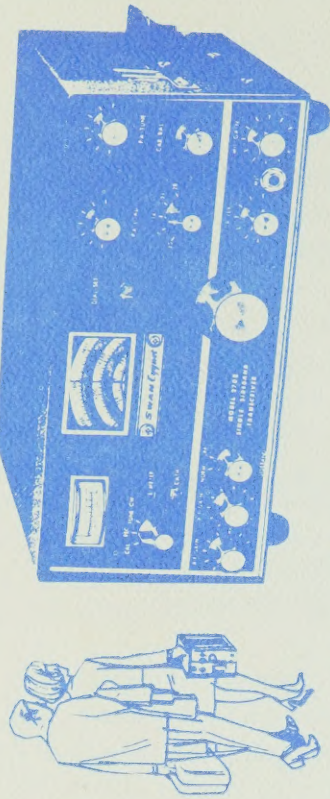
We take great pleasure of being in this fine group of operators in that we have been supplying Radio Equipments to your group for the past forty-two years, in fact since 1928.

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Your support is greatly appreciated by "all at Freck Radio Supply".

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Freck Radio & Supply Co., Inc.
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- UNEXCELLED PERFORMANCE
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- 260 WATT P.E.P. RATING
- 5 BAND COVERAGE
- FINEST CRYSTAL FILTER
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- BUILT-IN SPEAKER
- AND AC POWER SUPPLY

....as the

Swan 270

**BUT IT'S NEW
LOW PRICE IS
ONLY \$499**

This price reduction has been achieved by making 12 volt DC operation an optional plug-in accessory. The DC components are now contained in a 1½ x 3 x 4 inch box which plugs in back of the 270 B, in place of the AC connector. Servicing and maintenance are made easier, and we are able to pass the savings in cost on to those of you who do not require 12 volt operation. The DC converter, model 14A, may be purchased at any time. Except for this difference, the 270 B is identical to the 270. It is truly a top notch performer and an even better value. See the new 270 B at your SWAN dealer today.

Model 270 B \$499
Model 14A, 12 volt DC converter ... \$39.50



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PROGRAM

Friday, October 30

1600	-2200	TALK-IN (75M SSB, 6M SSB, 2M FM) -Chairman: Ron McCann, WB4OZL Suite 202
1800	-2200	EARLY REGISTRATION - Chairman: John Fried, W4WWD In the Lobby - Street Level
	-2200	HOSPITALITY ROOM OPEN - Hosted by RARS members Suite 202

All times listed in this Program are Eastern Standard Time (EST).



Are you an ARRL member? The ARRL Booth in Banquet Room A will be open from 0930 to 1630 Saturday, October 31 to accept your application. Annual dues are \$6.50 (which includes your subscription to QST Magazine); associate family members may join with dues of \$2.00 if in your immediate household. You do not have to be a licensed ham to become an ARRL member.

— THE 1971 MODELS ARE HERE —
and we can give you one indisputable reason why
YOUR NEXT CAR SHOULD BE A MERCURY OR COUGAR!

As most everyone in the Raleigh area knows, we operate a large Daily Rental division, without any mileage charge.

This fleet of Rental Mercurys & Cougars have traveled

ONE MILLION MILES — WITHOUT A SINGLE BREAKDOWN

in the past six months. Never have any of these superb automobiles lost a day in the shop for repairs, or caused a rental customer to call us from the road about a mechanical failure.



MERCURY and COUGAR — THE MILLION MILERS
and only

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Raleigh, North Carolina

PROGRAM

Saturday Morning, October 31

0800	-1200	TALK-IN (75M SSB, 6M SSB, 2M FM) -Chairman: Ron McCann, WB4OZL Suite 202
		REGISTRATION - Chairman: John Fried, W4WWD In the Lobby - Street Level
0900	-0930	WELCOME AND CONVENTION INFORMATION Ed Alderman, WA4PEN, RARS President Banquet Rooms B and C - Upper Level
0930	-1630	EXHIBIT AREA OPEN - Manufacturers Exhibits - Chairman: Stu Meyer, W2GHK/4 Banquet Room A - Upper Level
		HOSPITALITY ROOM - Hosted by RARS members Suite 202
1000	-1045	MARS SEMINAR coordinated by Bert Bailey, A4FMN/W4FMN Parlors D, E, and F - Lower Level
	-1200	DX FORUM moderated by Bob Rosier, K4OCE, NC DX Association Including presentations by Gus Browning, W4BPD/etc., etc. Bill Grenfell, W4GF/PJ9GF Lew McCoy, W1ICP John Attaway, K4IIF The Virginia Century Club Banquet Rooms B and C - Upper Level
	-1630	FLEA MARKET OPEN coordinated by Jesse Hodges, W4EEL Hillsborough Street Parking Lot (out front door to right)
	-1145	RACES AND CIVIL DEFENSE FORUM moderated by Cliff Blalock, W4GLK, Communications & Warning, North Carolina Civil Defense Agency Parlors D, E, and F - Lower Level
1145	-1330	LUNCH - The Hilton Inn, ground level, and see page 22 for nearby locations

EYEBALL LOUNGE - AMBASSADOR CLUB - LOWER LEVEL

You are cordially invited to attend meetings of The Raleigh Amateur Radio Society. Meetings are held the first Wednesday of each month at 7:30 p.m. in the Civil Defense Headquarters in the NC State Administrative Office Building at 116 W. Jones. Ample parking is available in the parking lot at the rear of the building.

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"Where Cooking Is A Family Tradition"

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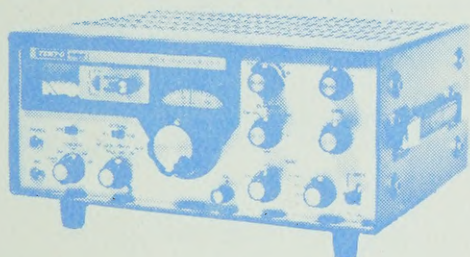
Henry Radio's **KENWOOD**



Never before has there been an amateur receiver and transmitter like the KENWOOD R-599 solid state receiver and T-599 hybrid transmitter. The wait is over . . . the promise of the transistor has been fulfilled. KENWOOD promises to be the new pacesetter in the field of short wave radio equipment . . . setting new standards of performance, reliability, flexibility, high styling, and value. Deliveries start in November. Order yours today. Become the proud owner of the world's most technologically advanced amateur Receiver/Exciter combination.

The R-599 Receiver \$298.00
The T-599 Transmitter \$345.00

Henry Radio's **TEMPO "ONE"**



The Tempo "ONE" SSB transceiver represents the culminating achievement of many years of experience in the amateur radio field. Modern design, superb performance, sturdy construction, outstanding reliability . . . at a surprisingly low price makes the Tempo "ONE" the best buy in transceivers today. Please come in or write for complete specifications.

The Tempo "ONE" \$298.00
AC/one, 110-220 volt 50/60 cycle power supply . . . \$99.00
DC/one, 12 volt DC power supply . . . \$107.00

Henry Radio's **2K-3**



The 2K-3 in a few short years has established itself as pre-eminent among amateur linear amplifiers. The reason is simple. It is designed and built better. And above all, the 2K-3 is truly "Linear" . . . Why not own the best — treat yourself to the big clean signal of the 2K-3.

The 2K-3
(console or desk model) . . \$745.00

Now, meet Henry Radio . . .



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PRIZES

ALL PRIZE DRAWINGS WILL BE MADE FROM REGISTRATION
TICKET STUBS

Drawings for small prizes will be made throughout the day Saturday and posted on a blackboard located near the prize table. You may claim these prizes at any time during the day.

MAIN PRIZES will be drawn during the evening banquet Saturday night. Prior to the drawing of the main prizes, a last call will be made for all unclaimed small prizes, and, at that time, those still unclaimed will be redrawn.

All registration stubs previously drawn for the small prizes will be placed in the "barrel" for the Main Prize drawing.

MAIN PRIZE WINNERS NEED NOT BE PRESENT TO WIN.

All members of the Raleigh Amateur Radio Society attending the 1970 ARRL Roanoke Division Convention have paid their registration fees, and other applicable fees, just as everyone else and at the same prices. It has therefore been decided that members of the R. A. R. S. holding valid paid-in-full registrations will also be eligible for the prize awards.

ALL PRIZE DRAWINGS WILL BE MADE FROM REGISTRATION
TICKET STUBS

PROGRAM

Saturday Afternoon & Evening, October 31

1200	-1300	NORTH CAROLINA DX ASSOCIATION MEETING Conducted by Jerry Stubblefield, WB4EEM Election of Officers, Last chance to become a Charter Member (Interested parties are cordially invited to attend) Banquet Rooms B and C - Upper Level (It is suggested that those attending this meeting plan an early or late lunch)
	-1330	"HAMS WIDE WORLD" - ARRL FILM shown by Mike Falzone, K4PSP Continuous Showings (27 minutes each) Parlors D, E, and F - Lower Level
1300	-1430	FM AND REPEATER FORUM moderated by Ed Alderman, WA4PEN Banquet Rooms B and C - Upper Level
1330	-1430	NET FORUM hosted by Bob Corns, K4MC Parlors D, E, and F - Lower Level
1430	-1530	"OSCAR VI AND BEYOND" - SPACE COMMUNICATIONS presented by The AMSAT Corporation Parlors D, E, and F - Lower Level
1500	-1630	ANTENNA FORUM - Panel members include: Lew McCoy, W1ICP, ARRL Headquarters Stu Meyer, W2GHK/4, RARS Jim Taylor, W8EEC/Ø, Hy-Gain Electronics Corp. Banquet Rooms B and C - Upper Level
1530	-1615	GETTING STARTED IN HAM RADIO conducted by Bob Johnson, W4CQJ Parlors D, E, and F - Lower Level
1630	-1800	ARRL FORUM conducted by Vic Clark, W4KFC, ARRL Roanoke Division Director Opening remarks by John Huntoon, W1RW(ex-W1LVQ) ARRL Secretary and General Manager Panel members are John Huntoon, W1RW, Lew McCoy, W1ICP, ARRL Headquarters Phil Wicker, W4ACY, ARRL Roanoke Division Vice Director State SCM's Parlors D, E, and F - Lower Level
1900	-2230	BANQUET in Banquet Rooms A, B, and C - Upper Level <u>PLEASE BE SEATED</u> Invocation by Rev. Hugh Kirby, WN4MUX, RARS Chaplain <u>AT CONCLUSION OF DINNER:</u> OPENING REMARKS by Ed Alderman, WA4PEN INTRODUCTION OF GUESTS FEATURED SPEAKER - Mr. Everett Henry, W3BG Chief, Amateur and Citizens Radio Division, FCC "HOW TO SUCCEED IN AMATEUR RADIO WITHOUT REALLY TRYING" Presented by Lew McCoy, W1ICP, ARRL Headquarters MAIN PRIZE DRAWING conducted by Stu Meyer, W2GHK/4
2330	-0030	INITIATION INTO THE ROYAL ORDER OF THE WOUFF HONG Mike Falzone, K4PSP, presiding See page 17 for more information Banquet Room A - Upper Level

NEW Heathkit® SB-102...



the world's best rig
(the SB-101)
is now even better

• New all solid-state Linear Master Oscillator gives shorter warm-up, greater stability, increased dial linearity • New receiver circuitry delivers 0.35 μ V sensitivity • 180 watt PEP SSB input — 170 watt CW input • 80-10 M coverage • USB, LSB or CW modes • Built-in CW sidetone • Built-in 100 kHz crystal calibrator • Triple Action Level Control™ reduces clipping & distortion • Front panel selection of built-in 2.1 kHz SSB or optional 400 Hz CW crystal filters • Operate with built-in VOX or PTT • Fast, easy circuit board-wiring harness construction • Run fixed or mobile with appropriate low cost power supplies

The New Heathkit SB-102 ... proud descendant of the famous "100" & "101". With a heritage like this, you expect top performance and value ... and you get it.


We improved the already excellent frequency stability and dial linearity of the "101" with an all solid-state LMO ... the result is a rig that stabilizes in half the time and tracks more accurately.

The "102" receiver is even hotter than the famed "101" ... sensitivity is now less than 0.35 μ V for 10 dB S+N/N ... an increase that gives you solid copy longer when the band is on the way out.

The new "102" ... the famous flexibility & performance of the "101" plus important new features. Put the hot new SB-102 in your shack now. From the Hams at Heath, of course.

SB-102, 23 lbs. \$380.00*
SB-600, Communications Speaker, 6 lbs. \$19.95*
HP-23A, AC Power Supply, 19 lbs. \$51.95*
HP-13A, DC Power Supply, 7 lbs. \$69.95*
SBA-100-1, Mobile Mtg. Bracket, 6 lbs. \$14.95*
SBA-301-2, 400 Hz CW Crystal Filter, 1 lb. \$21.95*

SB-102 SPECIFICATIONS — RECEIVER SECTION — Sensitivity: Better than 0.35 microvolt for 10 dB signal-plus noise to noise ratio for SSB operation. **SSB selectivity:** 2.1 kHz minimum at 6 dB down, 5 kHz maximum at 60 dB down — 2:1 nominal shape factor — 6:1 dB. **CW Selectivity:** (With optional CW filter SBA-301-2 installed) 400 Hz minimum at 6 dB down, 2.0 kHz maximum at 60 dB down. **Input impedance:** Low impedance for unbalanced coaxial cable. **Output impedance:** Unbalanced 2 ohm or 2 ohm speaker, and high impedance headphone. **Power output:** 2 watts with less than 1% distortion. **Spurious response:** Image and IF rejection better than 50 dB. Internal spurious signals below equivalent antenna input of 1 microvolt. **TRANSMITTER SECTION: DC power input:** SSB: 180 watts P.E.P. continuous voice. **CW:** 170 watts — 50% duty cycle. **RF power output:** 100 watts on 80 through 15 meters; 80 watts on 10 meters (50 ohm nonreactive load). **Output impedance:** 50 ohms to 75 ohms with less than 2:1 SWR. **Oscillator feedthrough or mixer products:** 50 dB below rated output. **Harmonic radiation:** 45 dB below rated output. **Transmit-receive operation:** SSB: Push-to-talk or VOX. **CW:** Provided by operating VOX from a keyed tone, using grid-block keying. **CW side-tone:** Internally switched to speaker in CW mode. Approx. 1000 Hz tone. **Microphone input impedance:** High impedance. **Carrier suppression:** 50 dB down from single-tone output. **Unwanted sideband suppression:** 55 dB down from single-tone output at 1000 Hz reference. **Third order distortion:** 30 dB down from two-tone output. **Noise level:** At least 40 dB below single-tone carrier. **RF compression (TALC):** 10 dB or greater at 1 ma final grid current. **GENERAL: Frequency coverage:** 3.5 to 4.0; 7.0 to 7.3; 14.0 to 14.5; 21.0 to 21.5; 28.0 to 28.5; 28.5 to 29.0; 29.0 to 29.5; 29.5 to 30.0 (megahertz). **Frequency stability:** Less than 100 Hz per hour after 10 minutes warm-up from normal ambient conditions. Less than 100 Hz for $\pm 10\%$ line voltage variations. **Modes of operation:** Selectable upper or lower sideband (suppressed carrier) and CW. **Visual dial accuracy — "resetability":** Within 200 Hz on all bands. **Electrical dial accuracy:** Within 400 Hz after calibration at nearest 100 kHz point. **Dial mechanism backlash:** Less than 50 Hz. **Calibration:** 100 kHz crystal. **Audio frequency response:** 350 to 2450 Hz ± 3 dB. **Phone patch impedance:** 8 ohm receiver output to phone patch; high impedance phone patch input to transmitter. **Power requirements:** 700 to 800 volts at 250 ma; 400 volts at 150 ma; 115 volts at 10 ma; 12 volts at 4.76 amps. **Cabinet dimensions:** 14 7/8" W x 6 5/8" H x 13 3/4" D

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PROGRAM

Sunday, November 1

0800	-0900	CONTINENTAL BREAKFAST in Banquet Rooms B and C - Upper Level Coffee, Doughnuts, and Juice -- Dutch Treat - 50¢ per person
0900	-1000	CONTEST JUDGING in Banquet Room A - Upper Level Home Brew Equipment (Contest Manager Bob Johnson, W4CQJ) QSL Cards (Contest Manager Stu Meyer, W2GHK/4) Left Foot CW and CW Proficiency (Contest Managers Bill McDowell, K4CIA and Bob Corns, K4MC)
	-1200	HOSPITALITY ROOM OPEN - Hosted by RARS members Suite 202
1000	-1100	THE FCC AND THE RADIO AMATEUR with Bill Grenfell, W4GF, Amateur and Citizens Radio Division, FCC Banquet Rooms B and C - Upper Level
	-1400	NORTH CAROLINA ARMY MARS MEETING conducted by Alvin Robinson, AA4NOQ/K4NOQ Parlors D, E, and F - Lower Level
1100	-1200	QCWA MEETING conducted by Stu Meyer, W2GHK/4 Non-QCWA members are cordially invited to attend Banquet Rooms B and C

As the 1970 ARRL Roanoke Division Convention comes to a close, The Raleigh Amateur Radio Society wishes to express its sincere appreciation for your presence and participation. We trust that you have had a pleasant stay with us and that the programs and activities have been interesting and beneficial. We hope that our new-found friendships will not wither, but will continue to grow after you return home.

May your return trip home be a safe and pleasant one. Please come back to Raleigh soon and visit with us again.

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EXCLUSIVE DIAMOND MERCHANTS

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PICK YOUR PERFORMANCE

Hy-gain/galaxy

FM-210 2 Meter Transceiver



Capability... That's what you purchase from Hy-Gain/Galaxy. Top performance from the first mass produced 2 meter transceiver. Fixed or mobile, the FM-210 will provide maximum pleasure with minimum investment. **And all American made too! No parts problems and backed by Hy-Gain's famous Customer Service!**

Top performing transceivers coupled with your choice of the world's best 2 meter antennas means a winning combination with capability...

SPECIFICATIONS:

Transmitter:

- Frequency Range: 143-149 MHz
- Antenna Impedance: 50 ohms nominal
- Power Requirements: 12-14v DC
- Transmitter: 5 watts (10w with AC-210 power booster)
- Microphone: High Z
- Deviation: Adjustable narrow or wide band with clipper filter also adjustable for optimum clipping lever

Receiver:

- Sensitivity: SINAD .5 uv for 12 db

- Quieting: 1 uv provides 20 db
- Squelch: Continuously adjustable
- Modulation Acceptance: FM wide band (narrow band available on special request)
- RF Circuitry: FET front end and duo conversion for minimum cross modulation and overload
- IF Frequency: 10.7 MHz and 455 KHz
- Frequency Control: 3 channel transmit, 3 channel receive. (146.94 MHz furnished) Transmit and receive frequencies independent of each other
- Audio Output: 3 watts from internal 3 2 speaker

Order #813. Price \$229.50

AC-210 POWER BOOSTER

Use the AC-210 on 115v AC or 12v DC to provide AC operation and 10 watts input. Supplied with mounting brackets for permanent mobile installation. Order #814. Price \$49.00.

MMB MOBILE MOUNTING BRACKET

Mounting bracket provides positive mounting and quick disconnect for easy removal. Between half of the mount is removable when not being used to conserve space.

Order #816. Price \$5.95



E IN A WINNING COMBINATION

Hy-gain/galaxy

PA-210 2 Meter 35 Watt Mobile Amplifier



SOLID STATE

This all new ruggedized solid state two meter mobile amplifier provides 35 watts output to greatly increase your communication range. The PA-210 is a must for areas where no repeater is available. The PA-210 is designed as a companion for the FM-210. (When used as a system, the AC-210 power booster is not required.) A unique circuit protects the output transistor from voltage spikes and surges. All change over relay functions are internal and controlled by FM-210 circuitry through a connecting cable.

SPECIFICATIONS:

- Input Voltage: 12v DC, negative ground only
- Power Input: 60 watts
- Power Output: 35 watts
- Frequency Range: 143 MHz to 149 MHz
- Operation: Class C
- Drive Requirements: 5½ watts required for 35 watts output (the PA-210 provides operating voltages to the FM-210 for high power operation)
- Antenna Requirements: 50 ohms unbalanced

Order #815, Price \$149.95

HY-GAIN 764 5/8" WAVE GAIN ANTENNA FOR TWO METER MOBILE

Model 764 5/8" wave antenna with 3db gain professional mobile antenna for two meters provides the highest gain and best matched performance (52 ohms) than any other mobile antenna on the market. Handles 110 watts and is constructed of 17-7 ph stainless steel with chrome plated hardware. It features an etched copper matching coil on a G10 epoxy fiberglass board. Exclusive claw mount fits any size hole 1/4" to 1/2". Easy installation and high power capability. Supplied with 22' of RG-58/U coax and PL-259 connector.

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LADIES PROGRAM

Friday, October 30

6:00 p.m.	-10:00 p.m.	EARLY REGISTRATION - Chairman: Susie Fried, XYL-W4WWD In the Lobby - Street Level
	-11:00 p.m.	COURTESY SUITE hosted by XYL's of RARS members Suite 102

Saturday, October 31

8:30 a.m.	-11:00 a.m.	HOSPITALITY ROOM hosted by XYL's of RARS members Coffee, welcoming hostesses, and directions to the Courtesy Suite. In the Ambassador Club on the Lower Level
10:00 a.m.	-11:00 a.m.	MORNING HIGHLIGHT - "Making The Most Of Your Beauty" Presented by Mrs. Betty Crowell, Beauty Advisor Merle Norman Cosmetics In the Ambassador Club on the Lower Level
11:15 a.m.		BEGIN BOARDING BUSES for Luncheon Trip
		COURTESY SUITE hosted by XYL's of RARS members Coffee, make-up, first aid, etc. Suite 102
11:30 a.m.		BUSES DEPART for Luncheon Trip
12:00 p.m.	-2:00 p.m.	LADIES LUNCHEON in North Hills Steak House North Hills Shopping Center Luncheon Highlight - "Packing Jet Style" Presented by Miss Janet Mooney, Staff Assistant, Women's Services Staff Assistant, Women's Services Delta Air Lines (Drawings for prizes will be held at 1:30 p.m.)
2:00 p.m.	-3:45 p.m.	SHOPPING SPREE in North Hills Shopping Center
3:45 p.m.		BEGIN BOARDING BUSES for return to The Hilton Inn
4:00 p.m.		BUSES DEPART for return to The Hilton Inn
7:00 p.m.	-10:30 p.m.	BANQUET in Banquet Rooms A, B, and C - Upper Level

Sunday, November 1

9:00 a.m.	-12:00 p.m.	COURTESY SUITE hosted by XYL's of RARS members Suite 102
-----------	-------------	---



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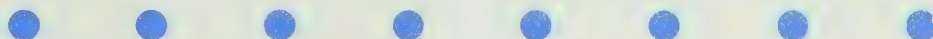


BEWARE OF THE WOUFF HONG

Don't forget to get your tickets early for the Saturday mid-night WOUFF HONG ceremonies in Banquet Room A. This is the first time in many years that this revered ceremony has been made available in the Roanoke Division.

It will be noted that one must have an amateur license AND be a member of the ARRL to attend. Licensed amateurs who have joined the league during the convention may also participate. The unlicensed wife of a ham, even though she may be an Associate family member, is not eligible to attend.

Although it is a very serious affair it is feared that the riotous costumes worn by the cast of characters (and they are just that!) might cause a bit of laughter. Please try to keep a straight face during the affair and for heaven's sake don't at any time laugh out loud. The actors will be trying hard and it wouldn't be fair to chuckle should they fluff a line (or two).



CAST OF ACTORS (In order of appearance)

The Old Man Mike Falzone, K4PSP
Novice (to be selected from the audience)
Crystal, Keeper of the Gate Dan Wolfe, WB2VKJ/4
His High Potential, the Spirit of
Amateur Radio, Spiritual Guardian
of the Wouff Hong Stu Meyer, W2GHK/4
QRM Bob Workman, WA4ZZN
QRN Bob Corns, K4MC

Prologue: Ed Alderman, WA4PEN

Directed (over the objections of the cast) By: Mike Falzone,
K4PSP

There will be a nominal charge of 50¢ to
defray cost of the certificate and mailing.



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State of North Carolina

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GOVERNOR ROBERT W. SCOTT

WHEREAS, operators in the Radio Amateur Service are licensed by the federal government to operate in the "public interest, convenience, and necessity" and take pride in serving their communities and nation while pursuing a satisfying hobby; and

WHEREAS, the Radio Amateur Service provides a continuously ready source of technically oriented personnel for business and industry, the ham population being a good indicator of the technical and educational level of an area; and

WHEREAS, radio amateurs promote international good will through free and informal communication with hams throughout the world;

WHEREAS, North Carolina benefits from the activities of its practicing radio amateurs and it is fitting to recognize their contributions to our state;

THEREFORE, I proclaim November 2 - 8, 1970

AMATEUR RADIO WEEK IN NORTH CAROLINA

and commend this observance to our citizens.



Raleigh, North Carolina

October 31, 1970

DONORS

The following have cooperated in supplying prizes for this convention:

Ameco-Gonset Division of Aerotron, Inc.
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Amperex Electronics Corporation
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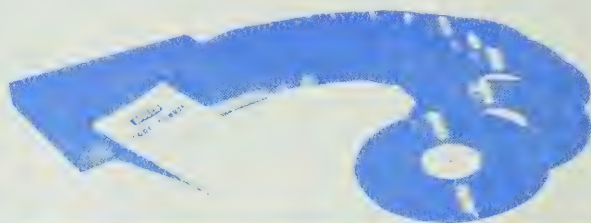
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Single transmission line "TRI-BAND® ARRAY"

By the only test that means anything . . . on the air comparison . . . this array continues to outperform all competition . . . and has for two decades. Here's why . . . Telrex uses a unique trap design employing 20 HiQ 7500V ceramic condensers per antenna. Telrex uses 3 optimum-spaced, optimum-tuned reflectors to provide maximum gain and true F/B Tri-band performance.

ONLY TELREX GIVES YOU ALL THESE FEATURES . . .

- Power rating 4 KW PEP . . . rain or shine
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- Heavy-duty steel gusset mounting plate
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weight and exceptional strength to weight ratio

- Stainless steel electrical hardware

With a Telrex Tri-band Array you get 49 lbs. of educated aluminum engineered and built to provide many, many years of performance unmatched around the world by any other make. Longest element 36 ft. Turning radius 20 ft. Shipping weight 65 lbs. Shipping container 13 in. x 5 in. x 13 ft.

Note: If not available from your dealer, order direct. You'll get fast, personal service.

Telrex Labs are design engineers, innovators and manufacturers of the world's finest ¾ to 160 meter communication systems and accessories priced from \$25 to \$25,000.

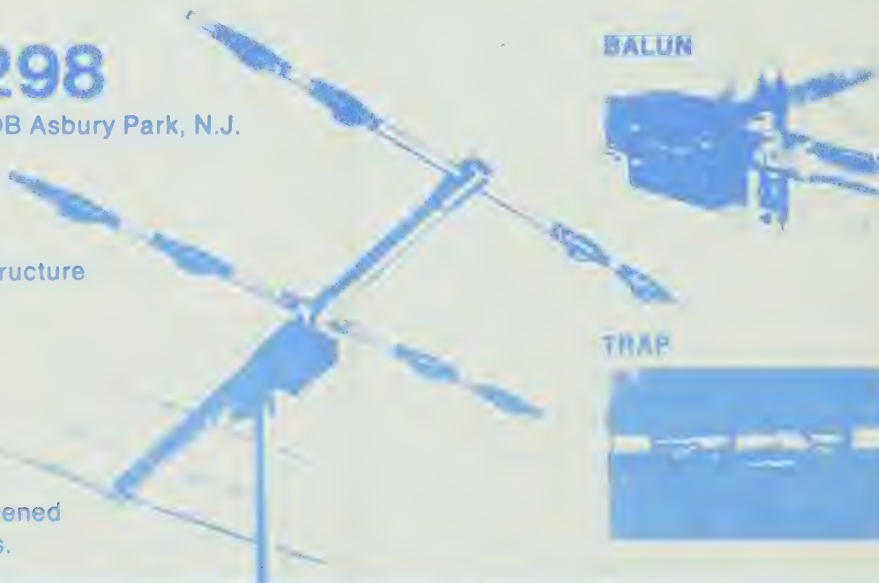
For technical data and prices on complete Telrex line, write for Catalog PL 70.

TM99D \$298

FOB Asbury Park, N.J.

1 KW peak
Model TB5EC
\$245 similar structure

Elements shortened
to show details.



Some thoughts from Mike Ercolino, P.E. — W2BD9, Telrex Chief Engineer . . .

"I've been in the game over 50 years (pounded brass for 25) and found out a long time ago that antennas were the weak link. We changed all that."

"Good antennas such as those we build can be ruined in two minutes by a tinker. So put 'em up and leave 'em up the way we make 'em."

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Ladies Program.	Ellie Workman, XYL WA4ZZN
Ladies Registration.	Susie Fried, XYL W4WWD

North Carolina QSO Party

All amateurs are invited to participate in the North Carolina QSO Party sponsored by The Raleigh Amateur Radio Society. All contacts will be made during the 32 hour period from 1800 GMT Saturday, November 7 to 0200 GMT Monday, November 9. Each station may be worked once on each amateur band. The general call will be CQ NC. Phone and CW will be considered separate contests and will require separate logs. North Carolina stations will send QSO number, RS/T and county (total 100). Out of state stations will send QSO number, RS/T and ARRL section or country. North Carolina stations will score one point for each contact multiplied by the number of ARRL sections plus countries. Out of state stations score one point for each contact multiplied by the number of counties worked. Suggested frequencies are: 3565, 3865, 3925, 7065, 7265, 14065, 14300, 21065, 21365, 28065, 28565 KHz. A trophy will be awarded to the top scorer in North Carolina and also to the top scorer outside North Carolina. High score in each ARRL section will receive a certificate. High novice score will receive certificate. Logs should show total score on last sheet and should be mailed no later than November 30, 1970. Mail to: Raleigh Amateur Radio Society, Post Office Box 12541, Raleigh, North Carolina 27605.

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Ask for directions at the Registration Desk in the Lobby!

Just Getting Started In Ham Radio?

If your interest in ham radio has only recently developed you already know by now that there are hundreds of brands of equipment from which to choose, some costly . . . some not too costly. For years, Ameco equipment has appealed to the beginner because of its modest cost, yet with engineering and manufacturing quality you would expect to find in really expensive gear. Read about our All-Wave Receiver and Novice Transmitter below, then write for our new Ameco catalog to get complete specifications on these and other moderately priced items.

Model R-5A Allwave Receiver



An exceptionally fine receiver for the short wave listener and beginning amateur operator. Fully transistorized-solid state. Covers .54 Mc through 54.0 Mc in five continuous bands. Includes standard broadcast band, all foreign broadcast bands, all amateur bands from 160 through 6 meters, all 27 Mc CB channels, all 2 way radio frequencies from 30 to 50 Mc including many police and fire departments. Controls include Beat Frequency Oscillator, Noise Limiter, Bandsread. Provisions for external "Q" multiplier. Compare with tube-type units costing as much!

Wired and tested **\$99.95**
Battery adapter kit. (permits operation
from 12 VDC or eight "D" cells) **\$ 3.95**

Model AC-1 Novice CW Transmitter Kit



The ideal kit for the beginner who requires a reliable TVI suppressed transmitter. Keying is clean and chirp-free. Crystal controlled, PI-network Output Circuit. Includes AC Power Supply. For 40 and 80 meters, CW. Fifteen watts input. Kit is simple to build and easy to operate.

Kit with coil for any 1 band, including tubes \$23.95
Extra coil kit for any 1 band, CK-1 1.00

Ameco Books and Records

Radio Amateur Theory Course: Gives sufficient information to pass the FCC exams for the Novice, Technician, General and Conditional Classes of Amateur Licenses. The Ameco Theory Course is the shortest path to getting a ham ticket

No. 102-01, Over 300 pages \$3.95

Radio Amateur License Guide: A study guide for those preparing for the Novice, Technician, Conditional and General Classes of Amateur Licenses. Contains over 200 questions and answers

No. 5-01, 32 pages 50¢

Mastering the Morse Code: Teaches the beginner how to learn the International Morse Code

No. 6-01, 32 pages 50¢

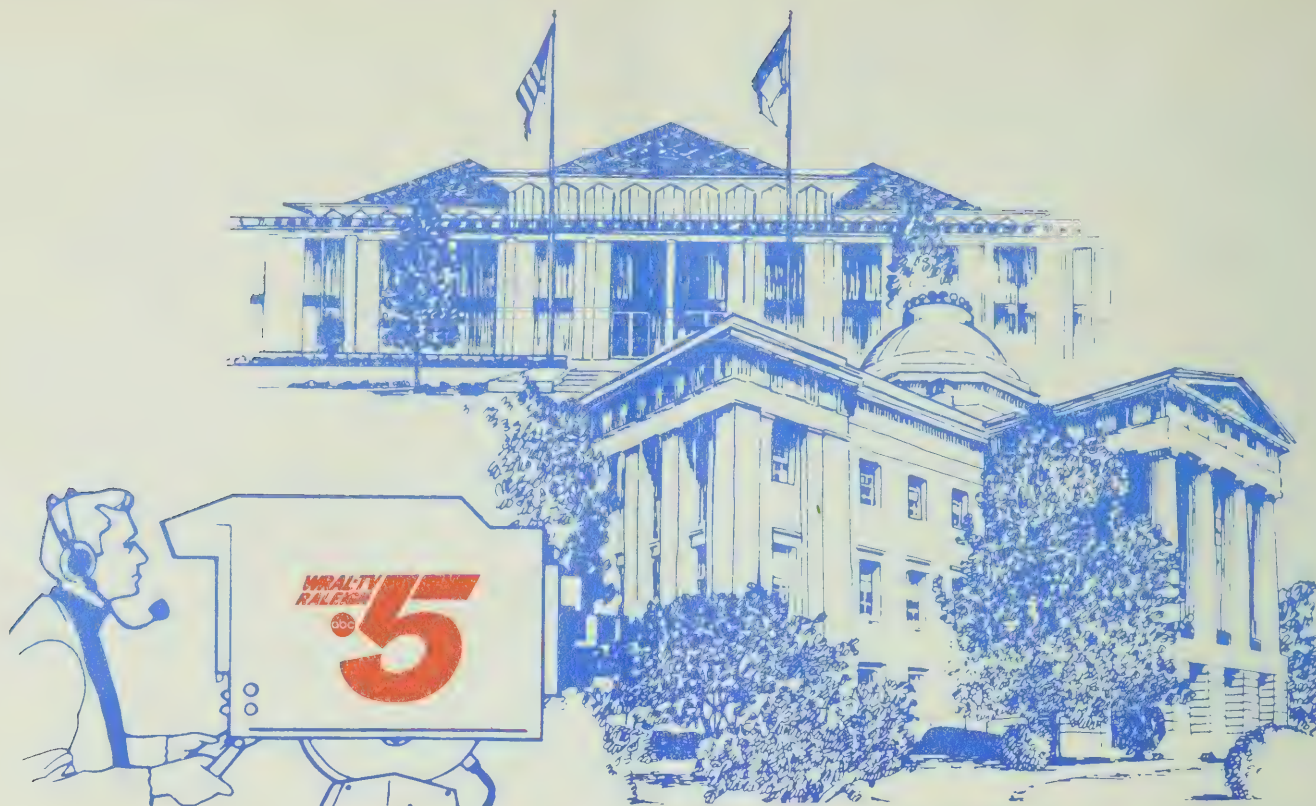
Ameco Jr. Code Course: Fastest, simplest way to learn code. Contains 10 lessons and one 12" record in the 33 rpm series. Sample FCC-type exams included

Complete Jr. Code Course (100 series) \$3.95



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NORTH CAROLINA
FM REPEATER ASSN. INC.**

VOLUME I

SEPTEMBER 1, 1971

NAVY MARS 2m. FM RPA SYSTEM
119602 MHz IN RPA LINK

(MARS EMERGENCY)

4015

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10/2/71
W4RUH
WB4TYB

PREFACE

This directory is issued annually on September 1, as a convenience to the members of the North Carolina FM Repeater Association Inc. The accuracy of the information contained herein is not guaranteed by the Association.

This directory is not for sale and its contents may not be reproduced without the written consent of the North Carolina FM Repeater Association Inc.

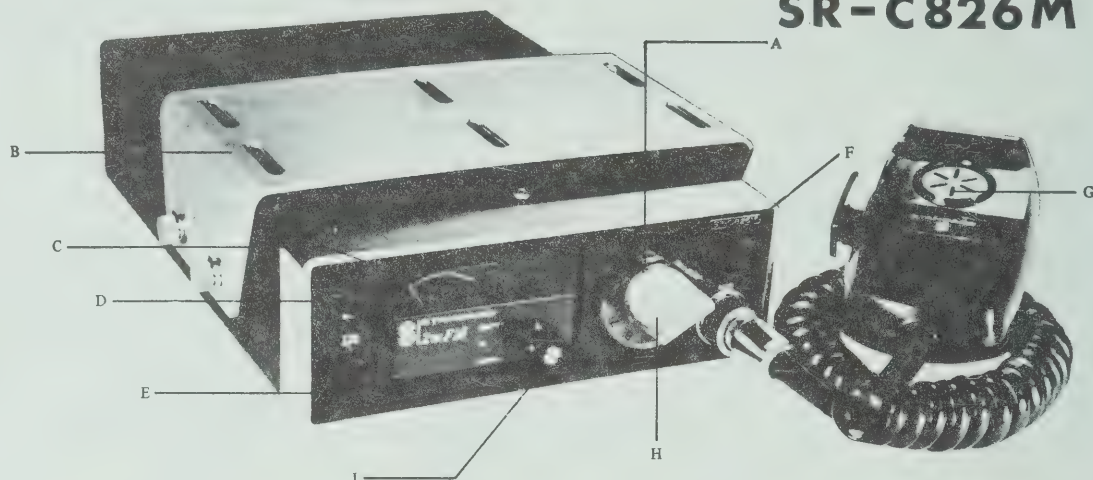
If you have information concerning some phase of FM operation in North Carolina, and you would like to see it included in this directory, please send it to the Secretary of the Association for consideration.

Information planned for publication in the next issue includes ---

- o New repeaters in operation or planned.
- o Special simplex frequencies in use in specific areas of the state.
- o Listing of the Associate Members in the Association.

STANDARD COMMUNICATIONS

SR-C826M



**new high performance
2 - meter transceiver**

- | | | |
|---------------------------------|---------------------------|---------------------|
| A. Channel indicator | E. Volume ON-OFF switch | |
| B. Mounting bracket | F. Transmitting indicator | H. Channel selector |
| C. Meter | G. Microphone | I. Function switch |
| D. Signal level squelch control | | |

Panel illumination is soft green to blend with instrument panel lighting.

General

Freq. Range — 143 to 149 MHz
 12 channels in 2 MHz spread
 Supply voltage — 11 to 16 VDC.
 13.8VDC nominal
 Current consumption — .15 amp
 receive standby. 2.4 amp transmit
 Polarity of supply voltage —
 Negative ground
 Number of channels — 12-Supplied
 with 4 channels

- 1) 146.94 MHz Tx and Rx
 (national calling channel)
- 2) 146.34 Tx — 146.76 Rx
 (repeater channel)
- 3) 146.76 Tx — 146.76 Rx
 (simplex channel)
- 4) 146.34 Tx — 146.94 Rx
 (repeater channel)

Microphone — Dynamic type with
 retractable neoprene cord
 Dimensions — 6 $\frac{1}{2}$ "w x 2 $\frac{1}{2}$ "h x 9 $\frac{3}{8}$ "d
 Weight — 4 $\frac{1}{2}$ lbs. max.
 Frequency stability — .001%
 (—10 to +60°C)

Transmitter

RF power output — .8 or 10 watts
 Audio response — +1 —3 dB of
 6 dB/octave pre-emphasis
 Output impedance — 50 ohms nominal
 Deviation — Internally adjustable to
 ± 10 kHz min. factory set to ± 7 kHz
 Spurious and harmonic attenuation —
 50 dB below the carrier power level
 Audio roll off above 3 kHz —
 16 dB/octave
 Type of modulator — Phase

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 Granite Quarry, N.C.
 28072**

Receiver

Sensitivity — .4 or less
 microvolts for 20dB quieting
 Squelch sensitivity — Threshold —
 .2 microvolts or less
 Maximum (tight) — Between
 20 dB quieting sensitivity and
 20 dB quieting plus 10 dB
 Deviation acceptance —
 Up to ± 15 kHz deviation
 Spurious and image attenuation — 65
 dB below the desired signal
 threshold sensitivity
 Adjacent channel selectivity (30 kHz
 channels) — 60 dB attenuation
 of adjacent channel
 Type of receiver —
 Dual conversion superheterodyne
 Audio output — 5 watts minimum*
 Audio distortion — 10% maximum*
 at 3 watt output
 *with external speaker

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Mobile 2 Meter FM Transceiver



DYCOMM MINI FM BOOSTERS

JUST INSERT BETWEEN YOUR ANTENNA AND TRANSCEIVER,
ADD 12-14 VOLTS AND QSO
ALL WITH AUTOMATIC RF SWITCHING

101-500C "FM BOOSTER"

4-12W input for
12-30W Max output.

Size: 3" x 4" x 4" Price \$59.95

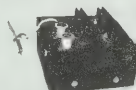


101-500E "BRICK BOOSTER"

1-3.5W input for
10-30W Max output.

Typically 20W out
for 2W in.

Low introductory price only \$69.95



101-500D "BLOCK BOOSTER"

8-15W input for
20-55W Max output.

Size: 3" x 4" x 6" Only \$89.95



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8-10W input for
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any channel in the 2 M band (146-147 MHz.)
with crystal precision and 0.3µV. sensitivity for
20 DB of quieting.

TRANSMITTER: 20 watt RF output on ten cry-
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DIMENSIONS: 3 1/2" H X 7 5/8" W X 9" D in anti-
theft case.

(One crystal and PTT mike included in suggested
amateur net price of \$449.95)

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704-249-8734

NORTH CAROLINA FM REPEATER ASSOCIATION INC.

On March 14, 1971, a large group of North Carolina amateur repeater owners and repeater club representatives met in Greensboro to determine if interest existed within the state to form some type of state wide organization to represent the "new FM Repeater interests". Representatives from most of the active repeaters within the state were present at the session. The decision to form the North Carolina FM Repeater Association Inc. was unanimous.

On April 18, again in Greensboro, the Association was formally created, and a seven member Board of Directors was elected.

The basic purposes of the Association are:

(1) to promote the exchange of information concerning repeater installation and operation among the amateurs of North Carolina, (2) offer guidance and assistance in establishing repeaters in the state, (3) provide a unified voice for VHF FM interests in N. C. to the FCC and other groups, and (4) advance the general interest and welfare of amateur radio as a public service.

Two classes of membership are available:

(1) Full Members - these are the individuals or clubs that own and operate repeaters that service N. C. Each repeater owner (whether it be an individual or club) is allowed two representatives, and one vote, toward directing the progress of the Association. These representatives elect a seven member Board of Directors annually to functionally operate the Association. Annual dues for Full Members is \$ 6.00. Charter Membership which will be available until September 15, 1971 is \$ 25.00.

- (2) Associate Members - these are individual amateurs interested and/or active in VHF FM operations. Associate Members will receive a revised edition of the Repeater Directory annually, plus four quarterly Newsletters. These newsletters will keep the membership informed of organizational activities, FCC rulemaking, and what's happening around the state. Annual dues are \$ 2.00. Additionally, one general membership meeting will be held each year, normally associated with a hamfest or ARRL Convention. Special FM programs will be conducted at these meetings.

Only through a united effort on the part of individual repeater owners and clubs will the goals and aspirations of the North Carolina FM Repeater Association be realized. If you or your club currently operate a repeater, or if you have definite plans for placing one into service, and you would like to become a part of this Association, please write for a repeater membership application.

The Association has the potential for becoming the largest single organized voice for amateur radio in the state of North Carolina.... we would certainly like to have you contribute to this voice.

Bill Parris, K4GHR
Sec/Treas. NC FM Rptr Assn
Rt 6 Box 605
Salisbury, N. C. 28144

PLAIN TALK ABOUT REPEATERS

What is a repeater?

A repeater is a combination of a receiver and a transmitter, each tuned to separate frequencies, and interconnected by a carrier operated relay and certain other linkages. The repeater is able to receive a signal on one frequency and retransmit it on a second frequency at the same time.

Normally, repeaters are located at high elevations, such as on mountain tops or high buildings, and serve to extend the communications range beyond the normal capabilities of the typical VHF station.

Stations most often requiring the capabilities of the repeater are mobile or portable units communicating with other mobiles, portables or base stations. Using a repeater, a low powered mobile or hand carried walkie talkie can communicate with similar stations over ranges of 20 to 60 miles.

There are 17 active repeaters in North Carolina at the present time, serving all major metropolitan areas. Some of these repeaters are owned and operated by individual amateurs, others by organized groups or clubs.

Operating through a repeater offers a new experience in amateur radio -- so how about it?

How do I call into a repeater?

There is no established standard for announcing your presence through a repeater. But there are several accepted means and we will review them here. However, before we start, there are several things which you must know about repeaters.

1. Long calls into repeaters are completely unnecessary, and should be avoided.
2. Repeater are equipped with automatic logging recorders that tape a specified length of time during a transmission - you are obligated to find out what this time period is and identify your station so it will get on the log. This requirement is being

reviewed by the FCC but it is a requirement at this time.

3. Most repeaters are equipped with a timer which will shut the repeater down if an input signal holds the receiver open (or the transmitter on) for more than a pre set time period. Most repeaters in North Carolina have 3 minute timers in use.
4. Some repeaters have automatic identifiers - either voice or CW - while others require that the using station identify not only himself, but the repeater too.
5. All repeaters are equipped with remote control mechanisms whereby several "Control Stations" can turn the unit off and on from some remote locations.
6. Most repeaters have an automatic clock timer that turns the repeater on and shuts it off at pre set times.
7. Repeater should be used for communication where simplex operation is not satisfactory. This is usually the case for portable and mobile stations.
8. Breaking stations should be recognized immediately, in the event they have emergency traffic. Stations in QSO should allow sufficient time between successive transmissions to allow other stations to break in.
9. When making calls - you should announce the frequency on which you are listening. If you are getting into a repeater - which you did not know about - then someone can get on your frequency and tell you; or he may alert you to the fact that there is a repeater on some other frequency.
10. Remember - you are using someone else's equipment. The repeater represents someone's hard work, money, and license. So adhere to all regulations, and do not over extend your privileges.

Now - how about those procedures? Assume your call is WA4XXX, and the repeater you are operating through is K4OK which has an input frequency of 146.34 mhz. and an output frequency of 146.94 mhz. The time is 1830 local time. Let's go

- a. You wish to announce that you are on frequency and ready to enter into QSO with any station. You should announce:

" 1830, this is WA4XXX on 34/94"

- b. You wish to call W4BO- an old friend who abandoned 3938 when you did. You should say:

" 1830, W4BO this is WA4XXX on 34/94"

- c. You wish to break into a QSO in progress. Here is the sequence:

" Break" (as soon as you say "break", everyone should pause and let the repeater drop out - when this happens you say:)

" 1830, this is WA4XXX"

- d. You wish to sign out of the repeater after you have had your fun - drop your signal, to allow the repeater input to clear, then announce:

"1830, WA4XXX clear through K4OK"

- e. What should you do if the repeater "times out" while you are talking? Of course you will not know this as long as you talk - but when you stop and drop your signal, you will not hear the repeater squelch - nor will the other station answer you. So wait 5 seconds, re-key the repeater and resume the contact. The other stations meanwhile sit patiently and wait - they should not be trying to re-key the repeater -- for only you will know when the right time to re-key has arrived. For after all it was you that timed it out.

Notice that the time and your call are announced so they can get into the automatic taped log. Everything is short and sweet. And by the way- use local time, not GMT.

Asheville

WA4NUO

INPUT: 146.34 mhz.
OUTPUT: 146.94 mhz.*

HOURS OF OPERATION:
In development stage
Plan for 24 hours

This repeater is still in the development stages and firm coverage areas have not been established. The unit currently serves mobiles in Buncombe County without difficulty.

WA4NUO currently is operating this repeater from his home QTH. The unit consists of a Motorola T-416 transmitter and Motorola receiver with a nuvistor pre amp. The antenna system consists of two Hy Gain 5/8 wavelength ground planes.

The ultimate location of the repeater is still unknown at this time but consideration is being given to the top of the Buncombe County Court House, a 15 story building in the downtown area of Asheville.

This repeater is owned and operated by WA4NUO. The Buncombe County Amateur Radio Club may become the sponsor in the near future.

Trustee: Ralph W. Roberts, WA4NUO, Rt 1 Box 284,
Alexander, N. C. 28701

Questions concerning this repeater may be directed to the Trustee.

* This repeater operates on 146.76 mhz. sometimes.

Beulaville

WA4UMH

INPUT: 146.34 mhz.

HOURS OF OPERATION:

OUTPUT: 146.94 mhz.

0600 - 2330 local

Mobile coverage is consistent in these counties:

Duplin and Onslow in North Carolina.

Base stations from Goldsboro, Kinston, Jacksonville, Havlock, Smithfield and other surrounding towns easily access this repeater.

WA4UMH began operation from Beulaville in the Spring of 1970. The repeater consists of Motorola equipment with an amplifier radiating 80 watts output. The receiver and transmitter are at separate sites one mile apart and interconnected via wire. The receiver and its 6 db gain antenna are located at 150' on a water tower. The transmitter and a similar antenna at 75' are at the QTH of WA4UMH.

Repeater control is via commercial telephone lines. The repeater is open to all users - no tone required.

Users are asked to identify themselves, the repeater, and give the time when first keying the unit - again every 10 minutes - and at the end of each contact.

The repeater is down for modifications at the date of issue of this directory - but will be back into service in mid September 1971.

This unit is privately owned and operated by:

Donald R. Brown, WA4UMH

Box 361

Beulaville, N. C. 28578

Charlotte

W4BFB

INPUT: 146.34 mhz.

HOURS OF OPERATION:

OUTPUT: 146.94 mhz.

0600 - 2400 local

Mobile coverage is consistent in these counties:

Mecklenburg, and parts of Union, Cabarrus,
Gaston, Lincoln in North Carolina; and York
in South Carolina.

Base stations from Gastonia, Rock Hill, Shelby,
Monroe and other surrounding towns easily
access this repeater.

W4BFB began operation from Charlotte in February 1969.
The repeater consists of General Electric "Progress
Line" equipment with an output power of 25 watts.
The antenna system consists of a Sinclair diplexer
and a DB Products 6 db omni antenna.

The repeater is located in the elevator room on the
top floor of the North Carolina National Bank
building in downtown Charlotte. Antenna height is
1180 feet above mean sea level, and 270 feet above
the coverage area. Repeater control is via commercial
telephone lines. The unit is open to all users-
no tone required.

An automatic logging device records the first 20
seconds of each transmission. The repeater uses a
3 minute transmission timer which resets each time
the input frequency is cleared. An automatic CW
identifier provides the ID requirements.

This repeater is a Charter Member of the North
Carolina FM Repeater Association Inc. and is
sponsored by the Mecklenburg Amateur Radio Society.

Questions concerning this repeater may be directed
to Roland Kunkel, W4URS, 4014 Rhodes Ave.,
Charlotte, N. C. 28210.

Durham

No Call Yet

INPUT: 444.25 mhz.

HOURS OF OPERATION:

OUTPUT: 449.10 mhz.

24 hours

The Durham FM Association is in the construction and testing phases of this touchtone autopatch repeater which will service the Durham and Chapel Hill areas. This repeater should be in operation during the Fall of 1971.

The repeater site is on a watertower near I-85 in the northern section of Durham. The 9 db gain antennas will be 150' above the surrounding terrain. Repeater control will be via radio on 450 mhz. The unit will be open to all users.

An automatic tape logging system will record the first 10 seconds of each transmission.

This repeater is a Charter Member of the North Carolina FM Repeater Assn. Trustee is Charles Durst, WA4WTX, 1200 Leon St., Durham, N. C. 27705.

Chapel Hill

K4RSH

INPUT: 146.16 mhz. 146.22 mhz. 146.31 mhz.

OUTPUT: 146.76 mhz. 146.82 mhz. 146.91 mhz.

K4RSH will have this repeater fully operational in mid September 1971. The repeater consists of a Dycom, 4 channel scanning unit, with an output power of 10 watts. The antenna system is two 6 db antennas.

The site is on a nearby peak which is 720 feet above mean sea level and 300 feet above the surrounding terrain. The unit is open to all users - no tone required. A Hal Devices identifier will ID the repeater on CW. Repeater control will be on 450 mhz.

The repeater will operate on 16/76 initially and later be set to scan the receiving and transmitting frequencies listed above. Unit is owned and operated by Charles Blair, K4RSH, 16 Angier, Chapel Hill.

Durham

K4RUQ

INPUT: 146.34 mhz.

HOURS OF OPERATION:

OUTPUT: 146.94 mhz.

0600 - 0200 local

Mobile coverage is consistent in these counties:

Wake, Durham, Orange and Chatham in North Carolina.

Base stations from Burlington, Danville, Greensboro, Smithfield, Raleigh, Hendersonville and other surrounding towns easily access this repeater.

K4RUQ began operating from Durham in September 1969. Power output is 100 watts.

This repeater is a split site unit - there are two receiver sites, one in downtown Durham and the other at the QTH of K4RUQ. The transmitter, which feeds a 6 db omni J-Pole, is located on a 750' peak 10 miles north of Durham. This places the transmitting antenna 300' above the repeater coverage area.

Repeater control is via radio on 450 mhz. The repeater is open to all users - a 1682 cycle tone or whistle is needed to key up the repeater.

K4RUQ has an autopatch under construction - touch-tone pad will be required. Repeater output will change from 146.94 to 146.76 for autopatch only. The unit will revert back to 146.94 30 seconds after autopatch is completed.

This repeater is a Charter Member of the North Carolina FM Repeater Association Inc. and is owned and operated by K4RUQ.

Trustee: Bill Sims, K4RUQ, 1337 Clermont Dr.,
Durham, N. C. 27707

Danville

WB4QEP

INPUT: 146.28 mhz.

HOURS OF OPERATION:

OUTPUT: 146.88 mhz.

0600 - 2400 local

Mobile coverage is consistent in these counties:

Pittsylvania, Henry & Halifax in Virginia; Caswell, Guilford, & Rockingham in North Carolina.

Base stations from Martinsville, Roanoke, Lynchburg, Greensboro and other surrounding towns easily access this repeater.

WB4QEP began operation from White Oak Mountain, 10 miles north of Danville, in May 1971. The unit consists of RCA equipment and has an output power of 45 watts. The antenna system consists of a DB 4003 diplexer with a Hy Gain J-Pole as a receiving antenna and a Hy Gain 3 db colinear as a transmitting antenna. The antennas are spaced 24 feet apart on a 100' tower.

The site is 1200 feet above mean sea level and 600 feet above the surrounding terrain. Repeater control is via radio on 450 mhz. The repeater is open to all users - no tone required.

The repeater uses a 3 minute transmission limiting timer. Identification is via a CW identifier. Logging is on tape - to sign out, give the time and your call after the carrier drops 2 seconds.

This unit is a Charter Member of the North Carolina FM Repeater Association Inc. and is sponsored by the Danville Repeater Club.

Trustee: Amos R. Rhames, K4WQS, 214 Bailey Place,
Danville, Va. 24541

Questions concerning this repeater may be directed to the trustee.

Elizabeth City

WA4VTX

INPUT: 146.28 mhz. 146.94 mhz* HOURS OF OPERATION:
OUTPUT: 146.88 mhz. 146.88 mhz 24 hours

Mobile coverage is consistent in these counties:

Pasquotank, Camden, Currituck, Chowan, Perquimans, Gates and parts of Dare Hyde and Tyrrell in North Carolina; The greater Norfolk, Virginia Beach and Chesapeake areas of Virginia.

Base stations from the Pamlico Sound area of North Carolina to the Chesapeake Bay area in Virginia easily access this repeater.

WA4VTX began operation from Elizabeth City in 1967, operating on 146.34 and 146.94. The repeater consists of General Electric "Progress Line" equipment with an output power of 60 watts. The receiving antenna is a 9 db gain omni homebrew coax $\frac{1}{2}$ wave, transposed in PVC pipe mounted with the top at 250' on the east side of a 300' tower. The transmitting antenna is on the same tower at the 200' level. The receiving antenna line incorporates the use of a GE cavity.

The tower location is 2 miles west of Elizabeth City on rural road 1309. Elevation of the site is 17 feet above mean sea level. Repeater control is local at the site.

A manual phone patch to a two party fone line is available at the site-- this will be regraded to a private line in early 1972 whereupon the touchtone autopatch system will be activated. The logging recorder runs the first 15 seconds of transmitter air time. Users are requested to insert the time when identifying.

This unit is sponsored by the Pasquotank Amateur Radio Klub.

Trustee: Albert E. Onley, K4VHV

Direct questions and correspondence to:

Joseph B. Stevens, WA4JZX

704 W. Main St.

Elizabeth City, N. C. 27909

* Touchtone transmitted on 146.28 activates the 146.94 input.

Greensboro

WB4OFF

INPUT: 146.16 mhz.

HOURS OF OPERATION:

OUTPUT: 146.76 mhz.

24 hours

Mobile coverage is consistent in these counties:

Guilford and parts of Randolph, Davidson, Forsyth,
and Alamance in North Carolina.

Base stations from High Point, Winston-Salem, Lexington,
Burlington and other surrounding towns easily
access this repeater.

The Greensboro repeater has operated experimentally
since June 1971 as W4GG. In August 1971 the unit was
moved to the QTH of WB4OFF where it is now in full
operation.

The repeater consists of Motorola equipment with
an output power of 60 watts. The antenna system consists
of a diplexer and a "Ringo" antenna for both transmitting
and receiving.

The site is 980' above mean sea level and 80' above
the surrounding terrain. Repeater control is local
at the site. The unit is open to all users - no tone
required.

The repeater incorporates an automatic 12 second
logging recorder.

This repeater is a Charter Member of the North
Carolina FM Repeater Association Inc. and is affiliated
with the Greensboro Radio Club Inc.

Trustee: Bill Ingram, WB4OFF, 3903 Broadacres Dr.,
Greensboro, N. C. 27407

Questions concerning this repeater may be directed to
the Trustee.

High Point

K4VUG

INPUT: 146.34 mhz 146.20 mhz* HOURS OF OPERATION:
OUTPUT: 146.94 mhz 146.98 mhz* 24 hours

Mobile coverage is consistent in these counties:
Davidson, Guilford, and parts of Forsyth, and
R Randolph in North Carolina.

Base stations from Greensboro, Winston-Salem, Asheboro,
Burlington, Salisbury, Lexington, Mocksville, and
other surrounding towns easily access this unit.

K4VUG began operation from High Point in January 1969.
The unit consists of Motorola equipment with an
output of 250 watts. The two Hy Gain 3 db antennas
are spaced 300' apart - horizontally.

The repeater is located at the QTH of K4AZA, north of
High Point off Highway 311. Site elevation is 1000
feet above mean sea level and 100 feet above the
surrounding terrain. Repeater control is via
commercial telephone lines. The unit is open to
all users - no tone required.

An automatic tape logging system records the first
7 seconds of each transmission for the using station
to identify. Users should drop the carrier before
logging out. Repeater identification is on voice
tape at present, but a CW identifier is under con-
struction.

Satellite receivers are currently under construction
for K4VUG in Greensboro, Lexington (in use now part
time), and Asheboro. Another possible satellite
receiver location in High Point on a tower at the
600' level is currently being investigated.

An autopatch system is in use part time - details
can be obtained from the trustee.

Trustee: F. L. Warford, K4AZA, 121 Old Mill Road,
High Point, N. C. 27260

Questions concerning this repeater can be directed to
the Trustee.

K4VUG is a Charter Member of the North Carolina FM
Repeater Association Inc. and is privately owned by
K4AZA. The High Point Repeater Association assists
in maintaining the repeater operational.

Lexington

W4PAR

INPUT: 146.31 mhz.

HOURS OF OPERATION:

OUTPUT: 146.91 mhz.

0600 - 0100 local

Mobile coverage consistent in these counties:

Davidson and adjoining parts of Rowan, Davie
and Randolph in North Carolina.

Base stations from Winston-Salem, High Point, and
Salisbury easily access this repeater.

W4PAR began operation in June 1971 and is currently
located at the QTH of WA4JVD near Linwood, N. C. south-
east of Lexington. The repeater consists of a Motorola
Sensicon G receiver and a Motorola "Motrac" transmitter,
with a power output of 25 watts. The antenna system is
two 3 db ground planes with 20 foot vertical spacing.

The site is 750 feet above mean sea level and
75 feet above the surrounding terrain. Repeater
control is via commercial telephone lines. The unit
is open to all users - no tone required.

An automatic tape logging system logs the first
15 seconds of each transmission. Users are asked to
identify the repeater as there is no automatic ID at
this time - one is planned in the near future. The
unit uses a 3 minute transmission limiting timer which
resets when the transmitter goes off and the input
frequency is cleared.

This unit is a Charter Member of the North Carolina
FM Repeater Association, Inc. and is sponsored by
the Lexington FM Association.

Trustee: W4WAU, Raeford Everhart

Direct questions concerning this repeater to:

Larry F. Sharpe, WA4JVD
Rt 1 Box 414
Linwood, N. C. 27299

Jerry Everhart, K4FMC
or Rt 6 Becks Church Rd.
Lexington, N. C. 27292

North Wilkesboro

W4DCD

INPUT: 52.780 mhz. 146.420 mhz. 52.525 mhz.
OUTPUT: 52.525 mhz. 52.525 mhz. 146.050 mhz.

W4DCD repeater site is on Potter's Peak, near North Wilkesboro. This repeater serves the entire west central area of North Carolina.

This unit is linked to the WA4EHL repeater in Raleigh, which operates on the same input and output frequencies. This repeater is owned and operated by Malcolm Holt, W4DCD, 404 College St., Wilkesboro, N. C.

Mt. Pisgah

WA4BVW

INPUT: 146.16 mhz.
OUTPUT: 146.76 mhz.

HOURS OF OPERATION:
To be announced

This repeater is in the construction and testing phase. It is privately owned and operated by Ken Woodard, WA4BVW, RFD 2, Canton, N. C.

Mt. Pisgah, 18 miles southwest of Asheville, is approximately 4700 feet above sea level.

Raleigh

K4ITL

INPUT: 146.28 mhz

HOURS OF OPERATION:

OUTPUT: 146.88 mhz

Unknown

K4ITL began operation of this repeater in July 1971. The unit has a power output of 100 watts. The receiving antenna is a "Ringo" and transmitting antenna is a 6 db J-Pole. This repeater is owned and operated by Danny Hampton, K4ITL.

Raleigh

WA4EHL

INPUT: 52.780 mhz. 146.420 mhz. 52.525 mhz.

OUTPUT: 52.525 mhz. 52.525 mhz. 146.050 mhz.

WA4EHL is in the initial phases of operation at this time. This repeater is linked to the W4DCD repeater in North Wilkesboro - both units have identical input and output frequencies. This unit should provide mobile coverage to the entire east central area of North Carolina.

Roaring Gap

WB4PPS

INPUT: 146.22 mhz 146.94 mhz HOURS OF OPERATION:
OUTPUT: 146.94 mhz 145.50 mhz 0700 - 0100 local

Mobile coverage is consistent in these counties:

Wilkes, Surry, Alleghany, Yadkin, Alexander,
Iredell, and Davie in North Carolina.

Base stations from cities and towns in North Carolina
and Southern Virginia within 75 miles of the
repeater site easily access this unit.

WB4PPS began operation from Roaring Gap, 20 miles
north of North Wilkesboro, near the Blue Ridge
Parkway, in August 1970. The repeater of Motorola
"Sensicon" units and has a power output of 30 watts.
The two antennas are separated 150' horizontally.
The receiving antenna is a "Ringo" and the transmitting
antenna is a DB 224.

The site is 2960 feet above mean sea level and
2000 feet above the average elevation of the
surrounding coverage area. The repeater is located
on the skeet shooting range of the Roaring Gap
Club. Repeater control is via radio. The unit
is open to all users - no tone required.

The repeater uses a 3 minute transmission limiting
timer which resets instantly after accessing carrier
is dropped. A CW identifier identifies the unit
upon release of the accessing carrier. If the
repeater is timed out, it will still identify upon
release of the accessing carrier. Logging is the
user's responsibility - there is no automatic equip-
ment in use at this time.

This unit is a Charter Member of the North Carolina
FM Repeater Association Inc. and is sponsored by the
Blue Ridge Amateur Radio Association.

Trustee: Steve Kelly, WB4PPS, McElwee St.,
North Wilkesboro, N. C. 28659

Direct questions concerning the repeater to:
Michael G. Warren, WB4QCY, Rt 5,
North Wilkesboro, N. C. 28659

Salisbury

W4EXU

INPUT: 146.28 mhz.

HOURS OF OPERATION:

OUTPUT: 146.88 mhz.

0600 - 2400 local

Mobile coverage is consistent in these counties:

Rowan, Davie, and parts of Iredell, Cabarrus,
Davidson, Stanly & Forsyth in North Carolina.

Base stations from Winston-Salem, Charlotte, Greensboro,
Albemarle and other surrounding towns easily access
this repeater.

W4EXU began operation from Young's Mountain, 10 miles
west of Salisbury, in June 1971. The unit is a
commercial Motorola "Motrac" repeater and has an output
power of 25 watts. The two 3 db Mosely ground plane
antennas are situated on an 80' tower, with the
receiving antenna at 80' and transmitting antenna
at 60'.

The site is 1100 feet above mean sea level and 200
feet above the surrounding terrain. Repeater control
is via commercial telephone lines. The unit is open
to all users - no tone required.

An automatic tape logging system records for
15 seconds each time the transmitter is keyed - during
this period the using station should identify his call
and give the time. The unit uses a 3 minute transmission
limiting timer which resets each time the receiver
squench is released. The CW identifier identifies the
repeater 5 seconds after the receiver squench is opened.

This unit is a Charter Member of the North Carolina
FM Repeater Association Inc. and is sponsored by the
Rowan Amateur Radio Society.

Trustee: Barney S. Dodd, W4BNU, 420 W. Franklin St.,
Salisbury, N. C. 28144

Direct questions concerning this repeater to:

Bill Parris, K4GHR
Rt 6 Box 605
Salisbury, N. C. 28144

Fred Ostwalt, K4EYF
or 1316 Forestdale Dr.
Salisbury, N. C. 28144

Shelby

W4NYR

INPUT: 146.28 mhz.

HOURS OF OPERATION:

OUTPUT: 146.88 mhz.

0700 - 0100 local

Mobile coverage is consistent in these counties:

Cleveland, Gaston, and Rutherford in North
Carolina; Cherokee in South Carolina.

Base stations from Charlotte, Lincolnton, Forest
City, Gastonia, Gaffney, Spartanburg and other
surrounding towns easily access this repeater.

W4NYR began operation in June 1971. The repeater
site is Whitaker Mountain, located 10 miles south
of Shelby near Interstate 85, in Cherokee County in
South Carolina. The unit is a commercial Motorola
"Sensicon" repeater and has an output power of 30
watts. The antenna system consists of a DB 4024
diplexer with a Hy Gain J-Pole antenna on an 80'
tower.

The site is 1300 feet above mean sea level and 400
feet above the surrounding terrain. Repeater control
is via radio on 450 mhz. The repeater is open to
all users - no tone required.

The repeater uses a 3 minute transmission limiting
timer and is identified via a CW identifier.

This unit is a Charter Member of the North Carolina
FM Repeater Association Inc. and is sponsored by
the Shelby Radio Club Inc.

Trustee: Malcolm Spangler, K4KUT, 509 Suttle St,
Shelby, N. C. 28150

Questions concerning this repeater should be directed
to:

Joe Cherry, WA4AGR
P. O. Box 1005
Shelby, N. C. 28150

NORTH CAROLINA FM REPEATER ASSOCIATION INC.

Full Members

9 - 1 - 71

<u>GROUP</u>	<u>REPRESENTATIVES</u>
1. Repeater K4VUG High Point Repeater Assn. High Point, N. C.	F. L. Warford, K4AZA * Randy Smith, WA4HUV
2. Repeater K4RUQ Durham, N. C.	Bill Sims, K4RUQ *
3. Repeater WB4OFF Greensboro, N. C.	Bill Ingram, WB4OFF Don Harris, W4BUZ *
4. Repeater (No call yet) Durham FM Assn. Durham, N. C.	Charles Durst, WA4WTX *
5. Repeater WB4PPS Blue Ridge Am. Rad. Assn. Roaring Gap, N. C.	Steve Kelly, WB4PPS
6. Repeater WB4JWJ Charlotte, N. C.	Bob Robinson, WB4JWJ
7. Repeater W4PAR Lexington FM Assn. Lexington, N. C.	Larry Sharpe, WA4JVD Rae Everhart, W4WAU
8. Repeater W4BFB Mecklenburg ARS Charlotte, N. C.	Bob Southworth, WA4YIU * Roland Kunkel, W4URS
9. Repeater WB4QEP Danville Rptr Assn Danville, Va.	Amos Rhames, K4WQS *
10. Repeater W4EXU Rowan ARS Salisbury, N. C.	Bill Parris, K4GHR * Fred Ostwalt, K4EYF
11. Repeater W4NYR Shelby Radio Club Shelby, N. C.	Joe Cherry, WA4AGR Bill Bridges, K4WHQ

* Indicates member of Board of Directors

NORTH CAROLINA
REPEATER SUMMARY

<u>LOCATION</u>	<u>CALL</u>	<u>INPUT</u>	<u>OUTPUT</u>
Asheville	WA4NUO	146.34	146.94
Beulaville	WA4UMH	146.34	146.94
Chapel Hill	K4RSH	146.16	146.76
Charlotte	W4BFB	146.34	146.94 *
Danville (Va.)	WB4QEP	146.28	146.88 *
Durham	K4RUQ	146.34	146.94 *
Durham	(Unassigned)	444.25	449.10 *
Elizabeth City	WA4VTX	146.28	146.88
Greensboro	WB4OFF	146.16	146.76 *
High Point	K4VUG	146.34	146.94 *
Lexington	W4PAR	146.31	146.91 *
Mt. Pisgah	WA4BVW	146.16	146.76
North Wilkesboro	W4DCD	52.780	52.525
Raleigh	WA4EHL	146.420	52.525
		52.525	146.050
Raleigh	K4ITL	146.28	146.88
Roaring Gap	WB4PPS	146.22	146.94 *
Salisbury	W4EXU	146.28	146.88 *
Shelby	W4NYR	146.28	146.88 *

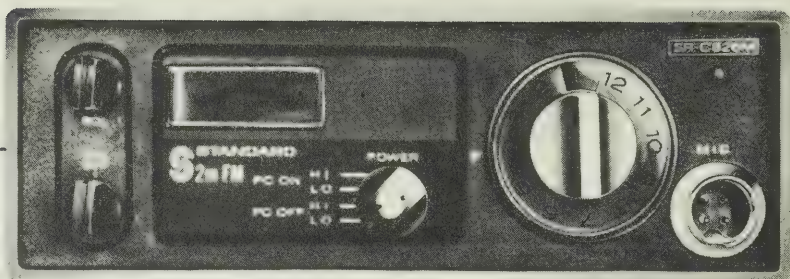
* Member N. C. FM Repeater Assn. Inc.

**REPEATER
DIRECTORY
OF THE
NORTH CAROLINA
FM REPEATER ASSN. INC.**

VOLUME II

JANUARY 1, 1973

W4RUH



MAXIMIZE YOUR AMATEUR RADIO

What new 2M FM gives me most for my money, performance vs. price? The answer's as clear as the superb reception you'll get on the new Standard 826MA, 10 watt, 2 meter FM transceiver. You'll find such outstanding features as 12 channels — with the four most popular ones included — and a RF output meter with selection of 10 watts or 0.8 watt for battery conservation. And of course, our "Astropoint" system

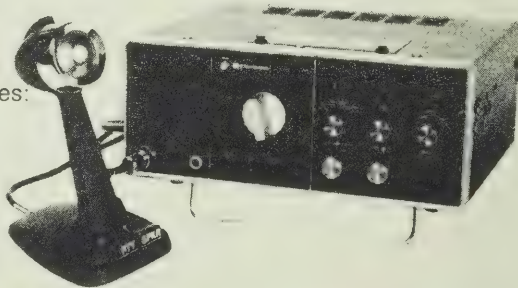
MONEY.

that assures: top selectivity, great sensitivity, and rejection of unwanted signals on today's active 2M band. **Helical Resonators** & FET front end provide the performance needed for tomorrows crowded channels. Provision for **tone coded squelch** to activate modern repeaters. A radio that won't become obsolete. Occupies less than 200 cu. in. Weighs less than 5 lbs. It has all the same "Astro-points" as entire Amateur line.

NEW 22 CHANNEL BASE STATION SRC-14U

Ultimate in a 2M FM Transceiver features:

- ☐ 22 channels
- ☐ AC & DC supplies Built In
- ☐ 10W (1, 3 & 10 selectable)
- ☐ Receiver offset tuning
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- ☐ Three Front Panel Meters
- ☐ Plus many more exciting features.



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W4YYF

Preface

This directory is issued annually as a convenience to the members of the North Carolina FM Repeater Association. The accuracy of the information contained herein is not guaranteed by the Association.

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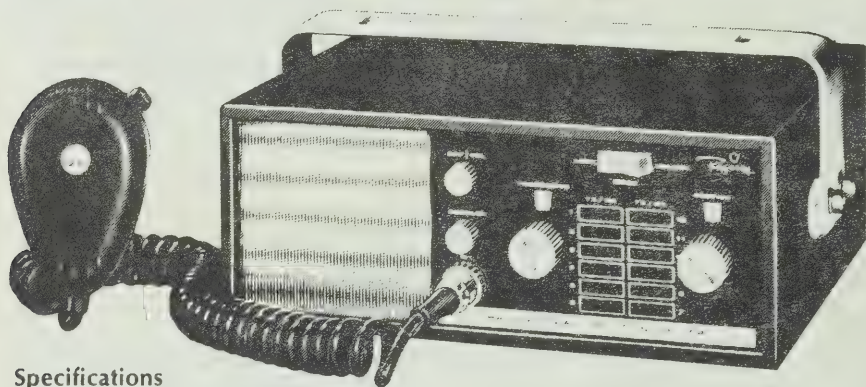
If you have information concerning some phase of FM operation in North Carolina, and you would like to see it included in this directory, please send it to the Secretary of the Association for consideration

KENWOOD-TEMPO-REGENCY-STANDARD-GALAXY-DYCOM-BOMAR-HY-GAIN-
ANTENNA SPECIALISTS-HUSTLER-HALLICRAFTERS-TURNER-BIRD-
CALECTRO and many others, write or call for our quote.

YOU WON'T FIND A BETTER DEAL

ASK FOR
"RICK"

Instant access to 144 frequency pairings with
20 watts out on the new HR-212 twelve channel
2 Meter FM Transceiver by Regency



Specifications

Power Output: 20 watts
(nom.) at 13.8 V DC

Frequency Range:
144-148 MHz

Channels: 12;
crystal controlled

Sensitivity: 0.4 uv,
20 DB quieting

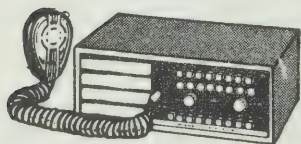
Spurious Rejection: 60 DB

Model HR-212

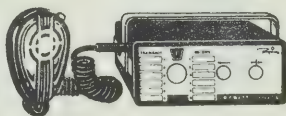
\$259 Amateur Net

Includes microphone, mounting bracket and factory
installed transmit and receive crystals for 146.94 MHz.

for all your 2 Meter FM needs



Model HR-2MS 8 channel
Transcan™ with signal search
reception and 15 watts minimum
output. **\$319.00** Amateur Net



Model HR-2A 6 channel
transmit, 12 receive 2 Meter FM
Transceiver with 15 watts minimum
output. **\$229.00** Amateur Net



Model AR-2 Amplifier boosts
2 Meter FM output power
300%.
\$119.00 Amateur Net

Vickers Electronics

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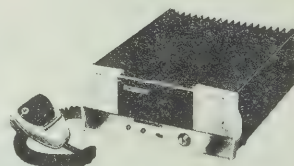
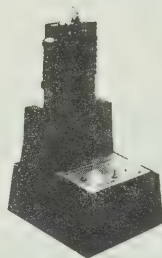
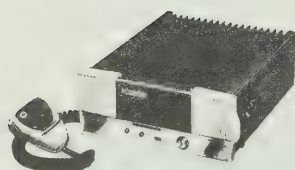
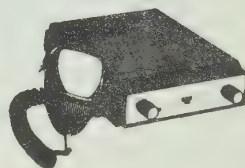
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DURHAM, N. C.

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FM TERMINOLOGY
Wayne Ashworth, K4CDZ

AUTOPATCH. An interconnecting device to enable automatic phone patches to be run from a mobile rig, using dial or touchtone. Similar to mobile telephone. Used in connection with some repeaters.

CAPTURE. The ability of a FM receiver to pick out the strongest signal while totally rejecting the weaker one(s).

CARRIER OPERATED RELAY (COR). Used on repeaters to activate the transmitter when a carrier is detected on frequency.

CLOSED REPEATER. A repeater with a tone input or other device to limit use to certain individuals. A repeater for use by a specific club or group.

CONTINUOUS TONE CONTROLLED SQUELCH SYSTEM (CTCSS). An uninterrupted sub audible tone superimposed on the carrier, for the purpose of opening receiver inputs (or on a repeater) for selective reception of desired transmissions, rather than all signals on a specific frequency.

CONTROL LINK. A circuit, usually phone lines or UHF radio, for the turning on, off, or other control functions of a repeater.

DEVIATION. Limits of carrier deviation of frequency shift on either side of the center frequency expressed as plus/minus khz.

DEVIATION ACCEPTANCE. Ability of an FM receiver to pass information of a specific deviation.

DISCRIMINATOR. Circuitry in a receiver for FM detection.

DUPLEX. To transmit and receive simultaneously on two separate frequencies to maintain communications, as with a repeater.

DUPLEXER. Cavity device with sharp tuning enabling transmitter and receiver of repeater system to utilize same antenna simultaneously.

LIMITER. Circuitry in an FM receiver to erase noise pulses, which are usually AM.

NARROW BAND. Plus/minus 5 khz. deviation. Not to be confused with narrow band FM (NBFM) which is the same width as AM A3.

OPEN REPEATER. A repeater that is open for use by all amateurs.

REPEATER. An intermediary transmitting and receiving station designed to relay signals automatically, usually located on a high building or hill so that mobiles can utilize it regardless of their location. Also referred to as a "machine."

SIMPLEX. Transmitting and receiving on the same frequency.

SWING. Total FM bandwidth, or frequency deviation.

TAPE LOG. A recorder which automatically comes on each time a repeater is keyed for a set period of time (usually 5-10 seconds) to record QSO information for an audio log.

TIME OUT. To cause a repeater to cut off due to transmitting longer than the repeater's timer allows. Usually the timer is set to limit transmission to 3 minutes.

TONE BURST. A single tone of specific duration and frequency used to open repeater inputs.

WIDE BAND. Plus/minus 15 khz. deviation.

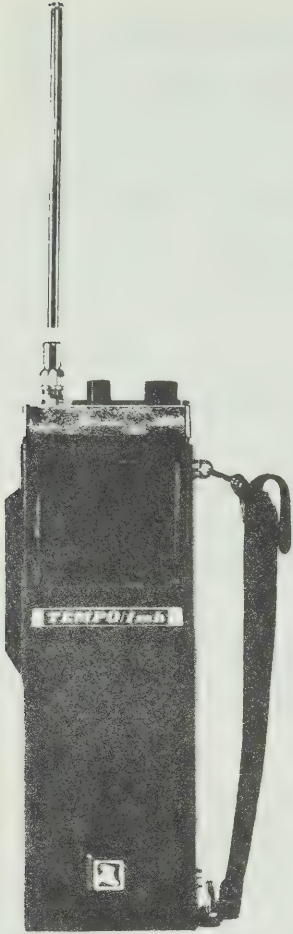
ZERO. To set a crystal for "0" reading on a meter connected to the discriminator output to insure that you are transmitting/receiving on the proper frequency.

10 - 4. OK.

10 - 7. Out of service.

10 - 8. In service.

10 - 20. Location (QTH).



TEMPO FMH

- 6 Channel Capability
- 2 Watts Output
- All Solid State, 12 VDC
- 144-148 MHz, any two MHz
- Supplied with one pair of crystals.
- Built-in charging terminals for ni-cad cells
- S-Meter, Battery Level Meter
- Telescoping Whip Antenna
- Internal Speaker and Internal Microphone
- 8.5" long x 2.9" wide x 2.0" deep
- 1.7 pounds with batteries
- 3.0 pounds shipping weight
- PRICE: \$189.00

So much for so little! This small 2 watt VHF/FM hand held transceiver offers high quality performance and features usually found on more expensive units. Features such as 6 channels for operation, completely hand held design, and 2 watts of output are standard.

Each transceiver includes a collapsible antenna, an antenna connector, and two dummy batteries for operation off of 8 AA carbon batteries. Tempo also offers a full line of accessories to meet every need.

The FMH delivers reliable, low cost operation on the two meter amateur band. The 2 watt output is more than adequate for most uses and is also perfect for driving the Tempo solid state amplifiers for output power up to 130 watts.

Tempo products and accessories are available from dealers all over the United States and in other countries. Please write or call us for information on all of our products or for the name of your nearest dealer.

GENERAL SPECIFICATIONS

Frequency Range: 144-148 MHz (any 2 MHz without retuning).

Channel Spacing: 25 KHz.

Number of Channels: 6 Channel Capability.

Power Requirements: 12 VDC nominal.

Receive Stand-by .02 amp current

Receive (Full Audio) .15 amp current

Transmit .50 amp current

Polarity of Supply Voltage: Negative Ground.

Channels Supplied: One pair of transmit and receive crystals for 146.52 MHz simplex.

Dimensions: 8.5" long x 2.9" wide x 2.0" deep.

Weight: 1.7 lbs with batteries (3.0 shipping).

Frequency Stability: $\pm 0.003\%$.

TRANSMITTER SPECIFICATIONS

RF Power Output: 2 watts.

Audio Sensitivity: 0.15 volts ± 3 db for 70% deviation at 1000 Hz.

Output Impedance: 50 ohms unbalanced.

Deviation: Internally adjustable $\pm 15\%$.

Spurious and Harmonic Radiation: 60 db nominal below the carrier power level.

FM Noise: -40 db below 70% deviation at 1000 Hz.

Type of Modulation: Phase.

Transmitter Crystal Frequency: $f_o/12$.

f_o = Operating Frequency (in MHz)

RECEIVER SPECIFICATIONS

Type of Receiver: Dual conversion superheterodyne.

Sensitivity: 0.5 uv nominal for 20 db quieting.

Squelch Threshold: .2 uv nominal.

Audio Output: 1.0 watt to 8 ohm load at less than 10% distortion.

Audio Response (at 1000 Hz): ± 6 db at 300 Hz
 -8 db at 3000 Hz

Input Impedance: 50 ohms unbalanced.

Selectivity (for 20 db quieting): -6 db at ± 6 KHz.
 -70 db at ± 15 KHz.

Spurious Rejection: More than 60 db.

Receiver Crystal Frequency: $(f_o - 10.7)/9$

f_o = Operating Frequency (in MHz).

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Repeater Operating Procedures

by

Don Harris, W4BUZ

Checking into and out of a Repeater

With the advent of the new FCC rules effective October 17, 1972, operation through a repeater becomes much simpler for the user station in many respects. It is no longer necessary that a repeater user station transmit the time through the repeater station at the beginning and end of a sequence of transmissions involved in a complete QSO. In addition, it is not necessary to give the call sign of the repeater through which you are operating as a user station. The repeater licensee is now responsible to insure that an identification is given of the repeater station for the shortest transmission and at intervals not to exceed five minutes thereafter during the period the repeater station is in service.

With these rule changes, the user station has become fully responsible for liabilities involved in message transmission content in communication exchanges. The repeater Control Operator will temporarily terminate the operation of the repeater upon hearing an improper use in progress.

Getting into the repeater requires the simple transmission of: W4ABC this is W4XYZ, over. Now, if W4ABC is monitoring the repeater frequency, he will hear your call to him. Long calls of W4ABC, W4ABC, W4ABC, on and on are not useful or necessary. If you do not receive a reply, try again in five minutes to determine if he has arrived home or gotten into his mobile.

Each station, after getting into the repeater, is responsible for proper identification at time intervals required. Should you talk continuously for 10 minutes, an identification must be given then and every ten minutes thereafter in a continuing transmission. Such long use would

probably not be considered good practice by repeater owners since no opportunity for others to use the repeater exists. Certainly, valid use requiring a long transmission will occur but generally, shorter transmission allowing the opportunity for others to use the repeater should be provided. Rules provide that identification shall be given at the beginning and end of a single transmission, or exchange of transmissions, and in no case shall a period of 10 minutes pass without an identification being given. Each licensee is charged with the responsibility to identify fixed, portable, and mobile operation in accordance with existing rules. Pages of changes have occurred such as no requirement for notification if you are going to mobile away from home on a long trip, if the trip would not exceed 15 days before you return. Study the rule changes shown in October, 72, QST for complete details for your own protection.

Now that you are into the repeater, carefully consider what you say before you say it. A good policy would be to never say anything you would hate to read in the morning paper with a statement that YOU said it. If you have a wreck, get stopped by an officer, or just burn your finger, wives, children, and even the public with their many monitors are listening. You project the image of amateur radio by your conduct. There would be much much more conversation about something wrong that you might do than there would if you saved someone's life.

The circumstance of a repeater user falls somewhere between host and guest. You are guest through the station of another licensee. You are oftentimes host to a newcomer to your community who may be passing through or moving in to stay. Help build a friendly image for your used repeaters. It is very distressing to drive to a strange area and find that no one using the repeater will give you an

opportunity to get acquainted or be friendly. Or, perhaps not even give an opportunity to use the repeater during the entire period he is within range. Certainly such a disappointed prospective user would consider the repeater users in that area an unfriendly bunch. Have you ever traveled up 5,000 feet to a mountain top and found that nobody had time to speak to you but for about 5 seconds on only one out of 5 repeaters? Yet the chit-chat continually flowed and you were ignored. My best advice to the user is to, "do unto others as you would have it done unto yourself." That pretty well covers the whole concept doesn't it?

There are some real NO NO things that must be brought forth. W4ABC knows that his XYL is monitoring the repeater frequency. He keys up the repeater and announces, "This is W4ABC mobile at Lexington, Susan, I'll be home in 30 minutes, W4ABC mobile clear." Amateur stations are licensed to communicate with other amateur stations and certain other classes of stations under specific conditions. This type of one way transmission is a violation. Official bulletins directed to many amateurs of amateur interest and certain types of code practice are permissible one way communications. Be certain of what you are doing before you goof unintentionally.

Much is brewing in the realm of permissible communications by amateur radio. As of December 1, 1972, if passed, you will be prohibited from transmitting any communication where the licensee, control operator, third party, or any person will receive a thing of material value either directly or indirectly, tangible or intangible. Be certain that you are up to date on the rules and don't stick your neck out. Avoid communications which have a commercial interest like the plague. If someone asks you to call Jim to see if he has any new linears for sale, refuse! The license you save may be your own. Playing of

music is absolutely prohibited yet some seem to get a thrill out of turning up the radio and pressing the mike.

Seems a bit complicated, doesn't it? Not really. It does require a little thought and common sense in good judgement. The old timers can help the newcomer who only knows he is on channel 3 in his new rig and all will have an enjoyable time. The newcomer who you think is a dumb cluck is likely to turn out to be a doctor or lawyer of high esteem and intelligence.

Getting out of the repeater is simple: W4ABC this is W4XYZ clear. Suppose you want to get into a QSO in progress. Do not yell "Break" or "Hey Jack." At the end of a transmission, give the call sign of the station with whom you wish to speak as originally proscribed, followed by "This is W4???, over." If you don't know anyone's call involved and you can justify the interruption, transmit your call sign followed by the word "Break" and wait for recognition. You must identify yourself at the beginning of any new sequence of transmissions. It is suggested that stations in communication or just monitoring never communicate with a person who fails to give his call. Ask the station calling to identify before you make any exchange of communication with him, or her. Always identify when you key a repeater (W4ABC testing).

Tone Burst Access

If you key a repeater and give out with a "W4ABC testing" and no repeater carrier is received back, the repeater is likely a Tone Access Closed Repeater, provided that you are on the correct input frequency and have a signal sufficient to key it up. In monitoring a given repeater, if you notice a ping sound at the beginning of each new exchange, or a touchtone sound, you have found a tone access repeater. Continuous tone indicates private

line type. You must transmit the correct tone to use the repeater. Some tone access repeaters are using this means to prevent keying of other repeaters on the same frequency of input. Others use it to prevent open use by those outside the repeater club or organization. They feel that if you don't support the repeater that you shouldn't use it. Many repeater listings state whether the repeater is closed, open, and the tone frequency required, if all may use it. Articles on tone access methods have appeared and will continue to appear in the Association Repeater Journal. You will be kept abreast of N.C. and nearby repeater tone access circumstances.

Log Keeping for the Repeater User

An accurate legible account of station operation shall be entered in a log for each amateur radio station. The log shall bear the call sign and signature of the licensee. The following information shall be recorded in the log as a minimum:

- a) written entries for all stations which are required only once, or when there is a change thereto;
- b) the location of the station; if mobile, the work "local" may be entered if you are located within 100 miles airline from your licensed primary station location, otherwise the location of the first and last entries for communications that day. Put a notation concerning your notification of your trip to the commission where such is required for long term mobile or portable operation away from home base;
- c) enter power input, frequency of your transmitter(s) and list the type of emission employed (the frequency sub-band may be used if you desire);
- d) enter the date of operation; be certain to specify at the beginning of your log what type of time you keep, such as EST, GMT, local

standard 24 hour, etc.;

e) a notation of third party messages sent or received, including names of all participants, including a brief description of message content;

f) enter the call sign of each station contacted, or the purpose for the communications. Frequency test, adjustment and measurement, or power level measurement, OBS, etc.;

g) all repeater user stations shall enter the times their station is put in and out of service. In addition, fixed station users shall enter the beginning and ending times for communications exchanged. Of course, portable stations must enter begin and end times for each QSO, too;

h) if someone else who is a licensee operates your station, be certain to have him sign your log and keep it correctly.

Keep your log for a year, at least, after the date of the last entry. Tape recorders can be used for portions of your log keeping. Make a study of the requirements prior to using such means.

Repeater Logging Recorder No Longer Necessary

The repeater logger recorder has been deleted by FCC. In general, the repeater licensee must keep a complete log except that no record of each station who communicates through his repeater is required to be kept. Complexity of repeater station logs will vary due to the number of remotely located control stations involved and the number of total repeaters, if linking is done. Each repeater owner must study the rules carefully to comply. No attempt will be made to explain all the possible requirements and situations in this writing.

Antennas and the User of Repeaters

Most repeater owners prefer to operate a non-tone access repeater in order that all

may enjoy the facility. Doing this provides difficult situations where fixed stations are located in between two usable repeaters having the same input frequency. If you trip two repeaters rather than the one you seek, it is suggested that a directional and/or low antenna be installed to prevent keying up both stations. Be considerate of others. In addition, the repeater output frequency, although not sacred or owned, should be used for direct communications with careful thought and judgement. 146.52, .46, and .58 and recommended direct channels.

Autopatch

The new rules adopted do not condemn or outlaw repeater stations from being automatically interconnected to a telephone exchange system. Amateur licensees should be aware that rules governing that type of facility will be considered for other of the Commission's radio services in a separate proceeding. It has been brought to the attention of the commission that numerous violations of Subpart E of Part 97 of the rules have taken place through the use of such interconnection, which facilitates communications from moving vehicles. Therefore, it may be necessary at some future date to examine in detail the current usage of "autopatch" facilities; and possibly restrict the use of such devices in the amateur radio service. Pending the adoption of any such regulation, amateurs are warned that usage of such interconnecting devices must be limited to amateur radio communications and may not be used for any type of business communications.

New proposed rule-making does include consideration of easing third party communications logging requirements which is of particular interest to repeater groups employing "autopatch."

The "autopatch" is a useful device and should not be abused. Failure to operate in accordance with the above recommendations may result in loss of the privilege. Care in identifying your station as conducting an autopatch at the beginning and end of a communications exchange should always be done. Correct log keeping for third party traffic must be exercised.

Profanity Usage

Use of profanity by amateur radio serves no useful purpose and lowers the general opinion of those who monitor of our hobby overall. Occasionally, I find someone who willfully and knowingly uses profanity on the air as a matter of conversation. He feels that if they can do it on television, why not on amateur radio. Surely, it must be legal. Unfortunately, court cases involving freedom of speech have made it possible for television networks to broadcast words generally considered profane, if it is a written portion of a play or program as set forth by the author. In addition, quotes of individuals in the news or live filmings of such individuals may be included. The reason the courts ruled as they did was Section 326 of the Communications Act of 1934, as amended. Section 326 provides that no rule in the communications act shall be construed to give the Commission authority of censorship of radio communications. To exclude such from a play or newscast could be considered censorship, if a rule requiring such was written. The court order did not, however, give the networks authority for announcers to use it as they carried on commercials and station identifications.

ASHEVILLE WA4NU0

Input: 146.~~34~~ mhz. ~~22~~ Hours of Operation:
Output: 146.~~94~~ mhz.*~~82~~ 24 hours

This repeater is still in the development stages and firm coverage areas have not been established. The unit currently serves mobiles in Buncombe County without difficulty.

WA4NU0 currently is operating this repeater from his home QTH. The unit consists of a Motorola T-416 transmitter and Motorola receiver with a nuvistor pre amp. The antenna system consists of two Hy Gain 5/8 wavelength ground planes.

The ultimate location of the repeater is still unknown at this time but consideration is being given to the top of the Buncombe County Court House, a 15 story building in the downtown area of Asheville.

This repeater is owned and operated by WA4NU0. The Buncombe County Amateur Radio Club may become the sponsor in the near future.

Trustee: Ralph W. Roberts, WA4NU0, Route 1, Box 284, Alexander, N.C., 28701.

Questions concerning this repeater may be directed to the Trustee

*This repeater operates on 146.76 mhz. sometimes.

CHARLOTTE W4BFB

Input:	146.34 mhz.	Hours of Operation:
Output:	146.94 mhz.	24 hours

Area of consistent mobile coverage: Mecklenburg, and parts of Union, Cabarrus, Gaston, and Lincoln Counties in N.C., and York and Chester in S.C.

W4BFB Repeater is sponsored by the Mecklenburg Amateur Radio Society, Inc. and has been in service since mid-1969.

The repeater is located on top of the N.C. National Bank Building in downtown Charlotte. The antenna system consists of a Sinclair duplexer and a 6 db omni antenna manufactured by DB Products. The antenna is 1180 ft. above sea level and 270 ft. above the surrounding terrain.

The machine is General Electric "Progress Line" equipment with a power output of 25 watts.

Control of the repeater is via commercial telephone lines. W4BFB is an open repeater, carrier access, 15 khz deviation. All users are requested to give the following information when gaining access to the repeater: local time, your call, and the call of the repeater (W4BFB).

Repeater trustee is Jack Campbell, W4MWD. Representatives to the NC FM Repeater Association are Dave Beck, WA3MID/4 and Terry Koelling, WB4LEJ.

Further information on W4BFB repeater or the Mecklenburg Amateur Radio Society may be obtained by contacting: Mecklenburg Amateur Radio Society, 2425 Park Road, Room 023, Charlotte, N.C., 28203.

CHARLOTTE WA4IPQ

Input: 146.16 mhz.
Output: 146.76 mhz.

Hours of Operation:
0630 - 2300 local time

Repeater currently offering mobile coverage to Mecklenburg County.

WA4IPQ Repeater is owned and operated by Bill Taylor, WA4IPQ. The repeater is located in the South Charlotte area, but will be moving to Anderson Mountain before the end of the year. Current antenna system consists of two General Electric 12" cavities with a 5/8 ground plane for transmitting and a J Pole for receiving. Transmit antenna height above sea level is 800 ft., and 35 ft. above the surrounding terrain.

The repeater itself is a V036N General Electric Repeater Station, with an output power of 50 watts. WA4IPQ is an open repeater, carrier access, 5 khz. deviation, and is equipped with a voice identifier. Control is via commercial telephone lines.

Bill Taylor, WA4IPQ and Howard Estes, WB4GUD represent the repeater in the North Carolina FM Repeater Association.

For more information on this repeater contact Bill Taylor, WA4IPW, 6827 Woodstream Drive, Charlotte, N.C., 28210.

CHAPEL HILL WB4QFZ

Input: 146.22 mhz. Hours of Operation:
Output: 146.82 mhz. 24 hours

Area of consistent mobile coverage: Orange, Alamance, Chatham, Lee, Wake, Durham, Caswell, Person, and Granville Counties in North Carolina.

WB4QFZ Repeater is owned and operated by Charles Blair, K4RSH, and has been in regular service since the Spring of 1972.

The repeater is located near Hillsborough, N.C., 1/2 mile south of Interstate 85. The antenna system consists of a 10 db omni receiving antenna and a 5 db transmit antenna. The transmitting antenna is 1000 ft. above sea level.

Repeater equipment consists of a General Electric Master Repeater, with a power output of 400 watts ERP. WB4QFZ is an open repeater, carrier access, 7 khz. deviation, and is equipped with a HAL Devices CW identifier. Control of the repeater is via 450 mhz.

A UHF Repeater is also in service at the same site. Input is 449.00 mhz. with an Output frequency of 444.00 mhz. Power output is 600 watts ERP.

There will be an autopatch for Chapel Hill on the repeater by January, 1973, with plans for a Burlington autopatch in the future. There are also plans for future links on 450 mhz. with other repeaters in the state.

Charles Blair, K4RSH, represents the repeater in the NC FM Repeater Association.

For more information on this repeater, contact Charles Blair, K4RSH, 16 Angier Dr., Chapel Hill, N.C., 27514.

DANVILLE WB4QEP

Input: 146.28 mhz. Hours of Operation:
Output: 146.88 mhz. 0600 - 2400 local time

Mobile coverage is consistent in these counties:
Pittsylvania, Henry & Halifax in Virginia;
Caswell, Guilford & Rockingham in N.C.

Base stations from Martinsville, Roanoke,
Lynchburg, Greensboro and other surrounding
town easily access this repeater.

WB4QEP began operation from White Oak Mountain,
10 miles north of Danville, in May, 1971. The
unit consists of RCA equipment and has an
output power of 45 watts. The antenna system
consists of a DB 4003 diplexer with a Hy Gain
J-pole as a receiving antenna and a Hy Gain
3 dB colinear as a transmitting antenna. The
antennas are spaced 24 ft. apart on a 100 ft.
tower.

The site is 1200 ft. above mean sea level and
600 ft. above the surrounding terrain. Repeater
control is via radio on 450 mhz. The repeater
is open to all users-- tone required.

The repeater uses a 3 minute transmission
limiting timer. Identification is via a CW
identifier. Logging is on tape--to sign out,
give the time and your call after the carrier
drops 2 seconds.

This unit is a Charter Member of the NC FM
Repeater Association, Inc. and is sponsored
by the Danville Repeater Club.

Trustee: Amos R. Rhames, K4WQS, 214 Bailey
Place, Danville, Va., 24541. Questions con-
cerning this repeater may be directed to the
Trustee.

DURHAM WB4QFT

Input: 449.10 mhz. Hours of Operation:
Output: 444.10 mhz. 24 hours

Coverage: Counties of Durham, Orange, Chatham,
Wake and Granville.

WB4QFT, built and operated by the Durham FM Association, is a 450 mhz touchtone duplex autopatch repeater. The repeater can be accessed by keying touchtone digits 1 and 4 in sequence, each being held for three seconds. The repeater transmitter will remain on the air for 30 seconds if no carrier is heard, identify, and go off. If carrier is received the transmitter will remain on the air for a maximum of 10 minutes with the ID being sent at 3 minute intervals. It will cycle off after 10 minutes and must be toned on again. The transmitter may be turned off at any time by the digits 1-5 as above. Users are requested to keep written log of all autopatch QSO's and submit a copy to the repeater manager at each meeting.

The autopatch can be accessed by touchtone digits 1-2. Full duplex is possible for two-way telephone conversations. The autopatch may be turned off by touchtone 2-1 or by allowing 30 seconds to pass with no carrier input. Digits 2-1 will disconnect the phone line; 1-5 will turn the transmitter off. 1-5 can be used to turn the system off at any time.

A Motorola T44 transmitter with 40 watts output and a T44 receiver with a Motorola preamp are coupled to the antenna by a Phelps Dodge duplexer. The antenna is a Decibel Products DB-406 with 7.4 dB omni gain. Control logic is all solid state using TTL logic. Control is via 450 mhz. and wireline. The repeater is located on the Central Carolina Bank Building in downtown Durham.

The Durham FM Association is a charter member of the NCFMRA and ENCR, and is a member of ARRL. The officers are:

Wayland McKenzie	K4CHS	President
Joe Edwards	W4EL	Vice-president
Sid Edwards	W4QWM	Secretary-Treasurer
Charles Durst	WA4WTX	Repeater Manager
Hugh Fisher	WB4NIF	Director
Lee Hineman	K4AHR	Director

The association has twenty-four members.

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Rowan Amateur Radio Society
Salisbury, N.C.
Sponsor of W4EXU Rptr.
"28/88"

Meets 2nd & 4th Monday of each month
in the Salisbury City Hall
on N. Main Street at 2000 hrs.

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Phil W4ACY
Standard Theatre Supply Company
125 Higgins Street
Greensboro, N.C. 27407
919-272-6165

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DURHAM K4RUQ

Input: 146.34 mhz. Hours of Operation:
Output: 146.94 mhz. 0645 - 0000 local time

Area of coverage: Durham, Wake, Orange,
Chatham and Pearson Counties in North Carolina.

This repeater is a charter member of the NC FM Repeater Association. The repeater is normally open access. Tone access will be initiated during band openings. Tone required when in tone access .5 sec. 1800 hz or touch tone digit 3.

K4RUQ repeater is a split site configuration, the transmitter located approximately 10 miles north of Durham, the receiver site located 10 miles south of Durham. The two sites are linked together via UHF, both up and down links.

The transmitter and receiver sites both use 6 db omni directional antennas. The power output of the transmitter is 100 watts. The repeater is located approximately 350 ft. above average surrounding terrain.

Control of the repeater is initiated both by radio and wire line. The repeater is equipped with autopatch.

The repeater owner is William K. Sims, K4RUQ, P.O. Box 2724, Durham, North Carolina, 27705. For further information contact K4RUQ.

ELIZABETH CITY WA4VTX

Input: 146.28 mhz. Hours of Operation:
Output: 146.88 mhz. 24 hours

Area of consistent mobile coverage: 40 mile radius of Elizabeth City, N.C.

The Elizabeth City Repeater, WA4VTX, is sponsored by the Pasquotank Amateur Radio Club, and has been in operation since 1965.

WA4VTX Repeater is located 2 miles west of Elizabeth City. Both antennas are 9 db gain units with the receiving antenna mounted at 250 ft., and the transmitting antenna at 200 ft. This places the transmitting antenna 200 ft. above sea level.

The repeater receiver is a General Electric Master receiver. The trasmitter consists of a GE Progress Line with a Motorola PA from Newsome Electronics (2 - 4X150A's) with a power output of either 8 or 200 watts.

Remote control of the repeater is via UHF radio link and wire. Identification is provided by a HAL Devices unit at 20 wpm. WA4VTX is an open repeater, 5 khz. deviation. Access can be gained normally with just a carrier; however, during abnormal "skip" conditions the touchtone combination "24" must be used to gain access.

WA4VTX has a touchtone autopatch and other touchtone functions including linking to other repeaters (including the 31/91 repeater in Norfolk) are in the planning stages.

Repeater trustee is Al Onley, K4VHV. Representatives to the North Carolina FM Repeater Association are Joe Stevens, WA4JZX and Al Onley, K4VHV. For more information on this repeater contact: Joe Stevens, WA4JZX, 704 W. Main St., Elizabeth City, N.C., 27909.

FAYETTEVILLE W4EHF

Input:	146.31 mhz.	Hours of Operation:
Output:	146.91 mhz.	24 hours

Input:	50.48 mhz.	Hours of Operation:
Output:	53.465 mhz.	24 hours

W4EHF, WA4VBC, and W4VTP have established two repeaters in Fayetteville--one on 6 meters and another on 2 meters. Both machines are located in the elevator room of the Highsmith-Rainey Hospital. Antennas for both are 300 ft. above sea level and 110 ft. above the surrounding terrain.

The repeaters furnish solid communications to all points in Cumberland County. Both are open repeaters, carrier access, 5 khz. deviation, and are on the air 24 hours each day. Control is via telephone line.

Both the 6 and 2 meter repeaters consist of General Electric Progress Line equipment. Power input is 60 watts. Antenna for the 6 meter repeater is a 3db Hy Gain unit. This repeater is used in coordination with the Cumberland County Civil Defense Agency. Antenna for the 2 meter repeater is a Ringo. This machine will be in regular service before the end of 1972.

Repeater trustee is William C. Finch, W4EHF. Representatives to the NCFM Repeater Association are William C. Finch, W4EHF and Sidney Purvis, WA4VBC. More information on the Fayetteville repeaters may be obtained by contacting William C. Finch, W4EHF, 818 Emeline Ave., Fayetteville, N.C., 28303.

GASTONIA WB4KIB

Input: 146.37 mhz.

Hours of operation:

Output: 146.97 mhz.

Unknown at this time

This repeater is in experimental service at this time. WB4KIB and WA4AGR are owners of this repeater. designed to ultimately serve greater Gastonia.

The machine provides mobile coverage up to 40 miles and fixed station access for 70 miles.

Equipment consists of General Electric Progress line transmitters and receivers with a DB-4048 duplexer, and a ground plane antenna. Identification of the repeater is on CW, supplied by a HAL Devices identifier.

Transmit antenna height above sea level is 1650 ft, and 900 feet above the surrounding terrain.

WA4KIB Repeater is an open repeater, 1800 hz tone burst required for access. Control is via 449mhz.

David Keever, WA4KIB, and Joe Cherry, WA4AGR, represent the repeater in the North Carolina FM Repeater Association.

For more information on this repeater contact David Keever, WA4KIB, 1613 Rhonda Dr., Gastonia N. C. 28052

GREENSBORO K4CJZ

Input: 146.16 mhz.
Output: 146.76 mhz.

Hours of Operation:
To Be Announced

K4CJZ Repeater is sponsored by K4CAW, K4CJZ and W4BUZ--members of the Greensboro Radio Club. The repeater has been on the air experimentally since August, 1972, and will be in regular service by the end of 1972.

The repeater is located in Southwest Greensboro, with the antenna 100 ft. above the surrounding terrain. The antenna system consists of a Sinclair duplexer and a Cush Craft Quad J Pole (6db).

The machine consists of a Motorola Sensicon A receiver and a 60 watt transmitter. K4CJZ is an open repeater, carrier access, 5 khz deviation, and is equipped with a CW identifier. Control of the repeater is via commercial telephone lines.

Repeater trustee is Charles F. Bino, K4CJZ. Representatives to the NC FM Repeater Association are Don Harris, W4BUZ and Al Rose, K4CAW.

For more information on this repeater, contact Don Harris, W4BUZ, Rt. 11, Box 160, Greensboro, N.C., 27410.

GRIFTON W4NBR

Input: 146.16 mhz. Hours of Operation:
Output: 146.76 mhz. 24 hours

Area of consistent mobile coverage: Pitt, Lenoir, Jones, Duplin, Wayne, Greene, Beaufort and Pamlico Counties in North Carolina.

On October 19, 1971, a group of amateurs from eastern N.C. met in Kinston to discuss the possibilities of establishing a repeater in the area. That meeting was the beginning of the ENC Repeater, Inc. Presently, more than fifty amateurs are members of this organization.

W4NBR Repeater is located on the WITN-TV tower near Grifton, N.C. in Pitt County. The transmit antenna is at 1300 ft. and the receive antenna is at 1100 ft. This places the transmit antenna at 1330 ft. above sea level.

The repeater transmitter and receiver are Aerotron solid state units mounted in water-tight boxes at the 1100 ft. level on the WITN-TV tower. Transmitter output is 25 watts. The transmit and receive antennas are Gam TG-4-MS units mounted with 1/4 wave brackets on the SE and SW legs of the tower. Identification is provided by a HAL Devices unit at 20 wpm.

Remote Control of the repeater is on 450 mhz. Plans are underway for the provision of a secondary repeater input on 146.13 mhz. W4NBR is an open repeater, carrier access, 5 khz. deviation.

W4NBR was placed into regular service on September 24, 1972. Repeater trustee is Bill Page, WB4LWX. For more information on the repeater or for membership information, write: ENC Repeater, Inc., P.O. Box 3384, Kinston, N.C., 28501.

HIGH POINT K4VUG

Input: 146.34 mhz. 146.20 mhz.* Hours of
Output: 146.94 mhz. 146.98 mhz.* Operation: 24 hrs.

Mobile coverage is consistent in these counties: Davidson, Guilford, and parts of Forsyth, and Randolph in N.C.

Base stations from Greensboro, Winston-Salem, Asheboro, Burlington, Salisbury, Lexington, Mocksville, and other surrounding towns easily access this unit.

K4VUG began operation from High Point in January, 1969. The unit consists of Motorola equipment with an output of 250 watts. The two Hy Gain 3 db antennas are spaced 300 ft. apart, horizontally.

The repeater is located at the QTH of K4AZA, north of High Point off Highway 311. Site elevation is 1000 ft. above mean sea level and 100 ft. above the surrounding terrain. Repeater control is via commercial telephone lines. The unit is open to all users--no tone required.

An automatic tape logging system records the first 7 seconds of each transmission for the using station to identify. Users should drop the carrier before logging out. Repeater identification is on voice tape at present, but a CW identifier is under construction.

Satellite receivers are currently under construction for K4VUG in Greensboro, Lexington (in use now part time), and Asheboro. Another possible satellite receiver location in High Point on a tower at the 600 ft. level is currently being investigated.

An autopatch system is in part time use--details can be obtained from the trustee.

Trustee: F. L. Warford, K4AZA, 121 Old Mill Road, High Point, N.C., 27260. Questions concerning this repeater can be directed to the Trustee. K4VUG is a Charter Member of the North Carolina FM Repeater Association, Inc., and is privately owned by K4AZA. The High Point Repeater Association assists in maintaining the repeater operational.

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Wilmington VHF Association
WA4ZAT
"22/82"
Wilmington, N.C.

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Piedmont Amateur Association
WA4ZAS
"37/97"
Camping with 2 and 6 meter antennas
and operating positions
Mt. Airy, N.C.

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Durham FM Association
WB4QFT
"449.1/444.1"
Durham, N.C.

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Greensboro Radio Club
W4GG
"16/76"
Greensboro, N.C.

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LENOIR WB4QGC

Input: 146.25 mhz. Hours of Operation:
Output: 146.85 mhz. 0600 - 0030 local time

Area of consistent mobile coverage: Caldwell, Catawba, Burke, Watauga, Ashe, and Alexander Counties in North Carolina.

WB4QGC Repeater is sponsored by the Hibriten Radio Club and has been in regular service since the summer of 1972.

The repeater is located on Hibriten Mountain near Lenoir. The antenna system consists of two Ringos vertically spaced. The transmitting antenna is 1850 ft. above sea level and 800 ft. above the surrounding terrain.

Repeater equipment consists of a Motorola Sensicon A receiver and a Motorola 140D transmitter. Output power is 25 watts. WB4QGC is an open repeater, carrier access, 5 khz deviation, and is equipped with a HAL Devices CW identifier. Control of the repeater is via 450 mhz.

The Hibriten Radio Club also sponsors a 6 meter repeater at the same site. It is also an open repeater. Input is 52.780 mhz. and the Output is 52.525 mhz. Power output is 10 watts.

Repeater trustee is Bud Ayers, WB4QWC. Representatives to the NC FM Repeater Association are Bud Ayers, WB4QWC and Bob Moretz, WB4BLE.

Additional information on the Hibriten Radio Club and WB4QGC Repeater may be obtained by contacting Bud Ayers, WB4QWC, 825 Hawthorne Drive, Lenoir, N.C., 28645.

LEXINGTON W4PAR

Input: 146.31 mhz. Hours of Operation:
Output: 146.91 mhz. 0600 - 0100 local

Mobile coverage consistent in these counties: Davidson and adjoining parts of Rowan, Davie and Randolph in North Carolina. Base stations from Winston-Salem, High Point and Salisbury easily access this repeater.

W4PAR began operation in June, 1971 and is currently located at the QTH of WA4JVD near Linwood, N.C., southeast of Lexington. The repeater consists of a Motorola Sensicon G receiver and a Motorola "Motrac " transmitter, with a power output of 25 watts. The antenna system is two 3 db ground planes with 20 ft. vertical spacing.

The site is 750 ft. above mean sea level and 75 ft. above the surrounding terrain. Repeater control is via commercial telephone lines. The unit is open to all users--no tone required.

An automatic tape logging system logs the first 15 seconds of each transmission. Users are asked to identify the repeater as there is no automatic ID at this time--one is planned in the near future. The unit uses a 3 minute transmission limiting timer which resets when the transmitter goes off and the input frequency is cleared.

This unit is a Charter Member of the North Carolina FM Repeater Association, Inc., and is sponsored by the Lexington FM Association. Trustee: W4WAU, Raeford Everhart. Direct questions concerning this repeater are referred to Larry F. Sharpe, WA4JVD, Rt. 1, Box 414, Linwood, N.C., 27299 and Jerry Everhart, K4FMC, Rt. 6, Becks Church Rd., Lexington, N.C., 27292.

MT. AIRY WA4ZAS

Input: 146.37 mhz.

Hours of Operation:

Output: 146.97 mhz.

0700 - 0100 local time

Area of consistent mobile coverage: Surry, Davie, Forsyth, Stokes, Wilkes, Alleghany, Rockingham and Rowan Counties in N.C. Several southern counties in Virginia.

WA4ZAS Repeater is sponsored by the Piedmont Amateur Repeater Association, Inc. and has been in service since April, 1972.

The repeater is located on Dix Hill, 3 1/2 miles east of Hwy. 52 on Cook School Road. The transmitting antenna array consists of four 4 element beams phased at 60 ft. Receiving antenna is a 6 db omni antenna at 120 ft. The transmitting antenna is 1852 ft. above sea level and 480 ft. above the surrounding terrain.

The repeater itself is a converted Motorola Sensicon base station with an output power of 250 watts.

Control of the repeater is via telephone lines. The machine is equipped with a CW identifier. WA4ZAS is an open repeater, carrier access, 5 khz. deviation.

Repeater trustee is William H. Lamm, WA4BNY. Representatives to the NC FM Repeater Association are George Brannock, WA4CQK and William Lamm, WA4BNY.

For more information on this repeater or the Piedmont Amateur Repeater Association contact: Tom Lee, WV4OCG, 3406 Overton Drive, Greensboro, North Carolina, 27408.

MT. PISGAH WA4BVW

Input: 146.16 mhz. Hours of Operation:
Output: 146.76 mhz. 0600 - 2300 local time

Area of consistent mobile coverage: Haywood, Buncombe, Henderson, Transylvania, Lincoln and parts of other adjoining counties in North Carolina.

WA4BVW Repeater is owned and operated by Ken Woodard, WA4BVW, Rt. 2, Box 131, Canton, N.C., 28716, and has been operating experimentally since October, 1971, and in regular service since November, 1971.

The repeater is located on Mt. Pisgah, 14 miles SSW of Asheville. The antenna system consists of two 5/8 verticals inside 3 inch PVC pipe and separated 50 ft. vertically. This places the transmitting antenna at 5800 ft. above sea level, and 2805 ft. above the surrounding terrain.

The repeater equipment consists of a Motorola 80 D transmitter and Sensicon A receiver. Output power is 30 watts. WA4BVW is an open repeater, carrier access, 7 khz. deviation, and is equipped with a CW identifier. Control of the repeater is via 450 mhz.

Ken, WA4BVW, represents the repeater in the NC FM Repeater Association. Additional details on this repeater may be obtained by contacting WA4BVW.

RALEIGH K4ITL

Input: 146.28 mhz. Hours of Operation:
Output: 146.88 mhz. unknown

K4ITL began operation of this repeater in July, 1971. The unit has a power output of 100 watts. The receiving antenna is a Ringo and transmitting antenna is a 6 db J pole. This repeater is owned and operated by Danny Hampton, K4ITL.

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Healing Springs Mountain
VHF Society, Inc.
Lexington, N.C.
W4PAR .31/.91 Repeater
Meets last Monday of each month
at Davidson County CD Headquarters
Months with 5 Mondays--supper
meetings "Dutch" treat--VISITORS WELCOME

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RALEIGH WA4ZNA

Input: 146.04 mhz.	Hours of Operation:
Output: 146.64 mhz.	1700 - 2400 weekdays
	0800 - 2400 weekends

Area of consistent mobile coverage: Wake, Durham and Johnston Counties, N.C.

WA4ZNA Repeater is sponsored by the Raleigh Amateur Radio Society and has been on the air experimentally since May, 1972. Regular service will commence before the end of 1972.

The repeater is located at the QTH of WA4ZNA, Lee Johnson, in Brentwood Subdivision. The antenna system consists of two 5/8 wave antennas at 100 ft. This places the transmitting antenna at 400 ft. above sea level and 100 ft. above the surrounding terrain.

The repeater is a Motorola 80 D, with an output power of 25 watts. WA4ZNA is an open repeater, carrier access, 5 khz. deviation, and is equipped with a CW identifier.

Repeater trustee is Lee Johnson, WA4ZNA. Representatives to the NC FM Repeater Association are: Ed Alderman, WA4PEN and Lee Johnson, WA4ZNA.

For more information on the Raleigh Amateur Radio Society and WA4ZNA repeater contact: Lee Johnson, WA4ZNA, 3312 Ashby Place, Raleigh, N.C., 27604.

ROARING GAP WB4PPS

Input: 146.22 mhz. Hours of Operation:
Output: 146.82 mhz. 0600 - 0100 local time

Area of consistent mobile coverage: Wilkes, Surry, Alleghany, Yadkin, Alexander, Iredell, and Davie Counties in North Carolina.

WB4PPS Repeater is sponsored by the Blue Ridge Amateur Radio Association of North Wilkesboro, N.C., and has been in regular service since August, 1970.

The repeater is a split site unit linked on 450 mhz. The receiver is located near Mulberry Gap (NC Hwy. 18) at an elevation of 3300 ft. above sea level. The transmitter is located near Roaring Gap (NC Hwy. 16) at an elevation of 2960 ft. above sea level. Both locations are near the Blue Ridge Parkway.

The receiving antenna is a Ringo; the transmitting antenna is a DB-224.

Repeater equipment includes a General Electric 4ETIC3 transmitter with an output of 100 watts, and a Motorola Sensicon A receiver. WB4PPS is an open repeater, carrier access, 7 khz. deviation, and is equipped with a CW identifier. Control of the repeater is via 450 mhz. The repeater is equipped with a 4 minute timer to limit lengths of transmissions.

Repeater trustee is Joseph S. Kelly, WB4PPS. Representatives to the NC FM Repeater Association are Joseph S. Kelly, WB4PPS and William S. Owen, WB4PZA.

For more information on the Blue Ridge Amateur Radio Association and WB4PPS Repeater contact Michael G. Warren, WB4QCY, Rt. 3, Box 190, North Wilkesboro, N.C. 28659.

SALISBURY W4EXU

Input: 146.28 mhz.
Output: 146.88 mhz.

Hours of Operation:
0600 - 0130 local time

Area of consistent mobile coverage: Rowan, Cabarrus, Iredell, Davidson, Davie, Yadkin, and parts of Forsyth and Alexander Counties in N.C.

W4EXU Repeater is sponsored by the Rowan Amateur Radio Society and has been in regular service since June, 1971. Experimental operations began in January, 1971.

The repeater is located on Young's Mountain, 10 miles west of Salisbury near Barber, N.C. The antenna system consists of two Cush Craft AFM-4D, 6 db antennas spaced 20 ft. apart vertically on a 100 ft. tower. This places the transmitting antenna at 1100 ft. above sea level, and 340 ft. above the surrounding terrain.

Repeater equipment consists of a Motorola Sensicon A receiver, and a Motorola Motrac Transmitter with an output power of 22 watts. W4EXU is an open repeater, carrier access, 7 khz. deviation, and is equipped with a HAL Devices CW identifier. Control of the repeater is via commercial telephone lines. The repeater is equipped with a timer connected to the transmitter to prevent any single transmission from exceeding 3 minutes.

The Central North Carolina Traffic Net meets each evening at 2200 hours local time on W4EXU.

Trustee is Barney Dodd, W4BNU. Representatives to the NC FM Repeater Association are Bill Parris, K4GHR and Fred Ostwalt, K4EYF.

Additional information on the Rowan Amateur Radio Society or W4EXU Repeater may be obtained from Bill Parris, K4GHR, Rt. 6, Box 605, Salisbury, N.C., 28144.

SHELBY W4NYR

Input: 146.28 mhz. Hours of Operation:
Output: 146.88 mhz. 0630 - 0130 local time

Area of consistent mobile coverage: Cleveland, Gaston, Lincoln, Mecklenburg in North Carolina; Lancaster, York, Cherokee, Spartanburg, Greenville, in South Carolina.

W4NYR Repeater is sponsored by the Shelby Radio Club and has been in regular service since September, 1971. Experimental operation of the repeater began in April, 1971.

The repeater is located 10 miles SE of Shelby near Blacksburg, S.C. The antenna system consists of a DB Products duplexer and a 6 db J Pole. The transmit antenna is located 1260 ft. above sea level, and 400 ft. above the surrounding terrain.

Repeater equipment consists of a Motorola Sensicon A receiver and Motorola Research Line Transmitter with an output power of 35 watts. W4NYR is an open repeater, carrier access, 7 khz. deviation, and is equipped with a HAL Devices CW identifier. Control of the repeater is via 450 mhz.

A traffic net is being planned for 2100 hours each evening.

Repeater trustee is Malcolm Spangler, K4KUT. Representatives to the NC FM Repeater Association are Joe Cherry, WA4AGR and Bill Bridges, K4WHQ.

For more information on the Shelby Radio Club and W4NYR Repeater, contact Bill Bridges, K4WHQ, 904 E. Main St., Shelby, N.C., 28150.

WILMINGTON WA4ZAT

Input: 146.22 mhz.

Hours of Operation:

Output: 146.82 mhz.

0630 - 0100 local time

Area of consistent mobile coverage: Columbus, New Hanover, Pender, Brunswick, Bladen and Onslow Counties, N.C.

The Wilmington VHF Association was organized in the Spring of 1972 to establish a repeater in the Wilmington area.

WA4ZAT Repeater is located on the WWAY-TV (Channel 3) tower near Boiling Spring Lake. This site is on State Highway 87, 16 miles SW of Wilmington. The receiving antenna is at 500 ft. and the transmitting antenna is at 350 ft. This places the transmitting antenna at 350 ft. above sea level.

The transmitter and receiver are Motorola 80 D units. The receiving antenna is a DB Products 224 fed with 1/2" foamflex line. The transmitting antenna is a Cushcraft AFM-4D fed with 7/8" heliax line. A new receiving antenna is in the planning stage, to be 4 Cushcraft AFM-4D stacked array at 600 ft. on the tower. Identification is by voice, 20 db below normal speech audio; however, this will be changed to CW identification.

Remote control of the repeater is via radio link and wire line. WA4ZAT is an open repeater, carrier access, 7 khz. deviation. Experimental operation of the repeater began in August, 1972, with regular service beginning November 1, 1972.

Repeater trustee is Elliot Hunter, WB4UNG. Representatives to the NC FM Repeater Association are Jerry Tate, K4GMP and Elliot Hunter, WB4UNG. Repeater Manager is Herman Brock, K4JQJ.

For more information on the repeater, or for membership information, write: Jerry Tate, K4GMP, 637 Bayshore Dr., Wilmington, N.C., 28401.

WINSTON-SALEM WB4QGE

Input: 146.~~25~~ mhz.⁰⁴ Hours of Operation:
OutputL 146.~~85~~ mhz.⁶⁴ 24 hours

WB4QGE Repeater is under construction and will be in regular service by the end of 1972. Initial coverage of Forsyth County is the objective of the repeater.

The machine will be located in the Baptist Hospital in Winston-Salem. The transmitting antenna will be 175 ft. above the surrounding terrain. The antenna system consists of a DB Products duplexer and a Ringo.

The repeater itself will be a Standard SC-ARPT-1 with a power output of 10 watts. A Tempo 100 watt amplifier will be added later.

Control of the repeater will be via commercial telephone lines. WB4QGE will be an open repeater, carrier access, 5 khz. deviation. Identification will be in CW.

The owner, trustee, and representative to the NC FM Repeater Association is J.R. (Bob) Reagan, W4KGR.

Additional information on the repeater may be obtained by contacting J.R. Reagan, W4KGR, Colonial Village, Apt. 126A, Winston-Salem, N.C., 27103.

Frequency Coordination in N.C.

by

Charles Durst, WA4WTX

NCFMRA Frequency Coordinator

Before 1968 there were only a few repeaters on the air in North Carolina and the biggest problem was keeping the old Motorola and G.E. gear on the air. Frequency selection was not a problem because everyone used .34-.94. Soon, however, the coverage of new .34-.94 repeaters began to overlap with the existing repeaters and cause problems. The need for additional repeater frequencies and some coordination of the selection of the frequencies became apparent. In early 1971 a group of North Carolina repeater owners met and formed the North Carolina FM Repeater Association. One of the committees formed by the NCFMRA was the Frequency Coordination Committee.

When the NCFMRA was formed there were 12 repeaters on the air, all occupying either .34-.94 or .28-.88. As two meter FM became more popular, more repeaters were put on the air. Today there are 25 repeaters on two meters, 3 on six meters and 2 on 450 mhz.

Virtually all of the frequency coordination problems have been related to two meter channels although the committee coordinates 450 mhz. control frequencies as well as the repeater frequencies. Thirteen pairs of repeater channels are available between 146 and 147 mhz. Nine of these are in use, three are unused, and the last is reserved for RTTY repeaters.

The major problem in frequency coordination is the fact that almost everyone wants a "prime" channel. This is confirmed by the fact that 14 of the 25 two meter repeaters are on either .34-.94, .28-.88 or .22-.82. Fifty-six percent of the repeaters are on 23% of the repeater channels. If co-channel repeaters are located close enough together, stations operating through one repeater will

key up the nearby repeater. This can be eliminated by geographic separation or frequency separation.

When a frequency is requested for a given location, certain data must be considered. The range of the repeater will be determined by antenna height above surrounding terrain and effective radiated power. If all repeaters were on flat ground at the same elevation, estimation of coverage would not be difficult. However, with mountain top repeater sites, special considerations must be given to coverage and frequency planning. When a frequency is requested from the committee, data should be supplied to determine what the coverage will be.

One additional technique used to reduce false keying and interference in repeaters is tone access. A touchtone frequency and a standard tone burst frequency have been selected for geographic areas of the state. Tone access is optional for use on a repeater but the frequencies below are recommended for state-wide compatibility if needed. Recommended simplex channels are also listed.

Plans for 220 mhz, 450 mhz and 146-147 mhz are under discussion at the time of publication.

* * *

=====

Shelby Radio Club

W4NYR

"28/88"

"Home of YOUR Hamfest"

=====

=====

Bill Sims, K4RUQ

K4RUQ

"34/94"

Durham, N.C.

=====

Frequency Coordination in N.C.
(3)

	I	II	III	IV	V
Touchtone (hz)	Central 1477	Piedmont 1266	Southern 1477	Western 1336	Eastern 1336
Tone Burst (hz)	1800	2200	1800	2000	2000
Primary Simplex	146.52	146.52	146.52	146.52	146.52
Secondary Simplex	146.46	146.49	146.46	146.58	146.58
<div> <div>REPEATER FREQUENCIES</div> <div> <div>.01-.61</div> <div>Raleigh</div> <div>Hendersonville</div> <div>Winston-Salem</div> </div> </div>					
.04-.64					
.07-.67					
.10-.70	RTTY	RTTY	RTTY	RTTY	RTTY
.13-.73					
.16-.76	ENCR	Greensboro	Charlotte	Mt. Pisgah	
.19-.79					
.22-.82	Chapel Hill	Roaring Gap	Charlotte	Asheville	Wilmington
.25-.85		Winston-Salem		Lenoir	
.28-.88	Raleigh	Salisbury	Shelby-Danville		Elizabeth City
.31-.91	Fayetteville	Lexington			
.34-.94	Durham	High Point	Charlotte		Beulaville
.37-.97		Mt. Airy	Gastonia		

NORTH CAROLINA FM REPEATER ASSOCIATION, INC.
Full Members

<u>Repeater</u>	<u>Representative</u>
1. W4BFB Repeater Charlotte Mecklenburg ARS	Dave Beck, WA3MID/4 Terry Koelling, WB4LEJ
2. K4VUG Repeater High Point High Point Rpt. Assn.	F.L. Warford, K4AZA Clint Davis, W4IVY
3. WB4QGC Repeater Lenoir Hibriten RC	Bud Ayers, WB4QWC Bob Moretz, WB4BLE
4. W4NBR Repeater Grifton ENC Repeater, Inc.	Oscar Porter, WB4EBW Joe Stevens, WA4JZX
5. WA4ZAT Repeater Wilmington Wilmington VHF Assn.	Elliott Hunter, WB4UNG Jerry Tate, K4GMP
6. WA4NUO Repeater Asheville WA4NUO Owner	Ralph Roberts, WA4NUO
7. WB4QFZ Repeater Chapel Hill K4RSH Owner	Charles Blair, K4RSH
8. WB4QEP Repeater Danville, Va. Danville Rpt. Club	Amos Rhames, K4WQS Harold Pennington, K4YFT
9. K4RUQ Repeater Durham K4RUQ Owner	Bill Sims, K4RUQ

- | | | |
|-----|---|---|
| 10. | WB4QFT Repeater
Durham
Durham FM Assn. | Charles Durst, WA4WTX
Wayland "Doc" McKenzie,
K4CHS |
| 11. | WA4VTX Repeater
Elizabeth City
Pasquotank ARK | Joe Stevens, WA4JZX
Al Onley, K4VHV |
| 12. | K4CJZ Repeater
Greensboro
K4CJZ, K4CAW, W4BUZ
Owners | Al Ross, K4CAW
Don Harris, W4BUZ |
| 13. | W4PAR Repeater
Lexington
Lexington FM Assn. | Larry Sharpe, WA4JVD
Rae Everhart, W4WAU |
| 14. | WA4BVW Repeater
Mt. Pisgah
WA4BVW Owner | Ken Woodard, WA4BVW |
| 15. | K4ITL Repeater
Raleigh
K4ITL Owner | Danny Hampton, K4ITL |
| 16. | WB4PPS Repeater
Roaring Gap
Blue Ridge ARA | Steve Kelly, WB4PPS
Wm.S. "Stoney" Owen, WB4PZA |
| 17. | W4EXU Repeater
Salisbury
Rowan ARS | Bill Parris, K4GHR
Fred Ostwalt, K4EYF |
| 18. | W4NYR Repeater
Shelby
Shelby RC | Joe Cherry, WA4AGR |
| 19. | WA4IPQ Repeater
Charlotte
WA4IPQ Owner | Bill Taylor, WA4IPQ
Howard Estes, WB4GUD |

- | | | |
|-----|---|---|
| 20. | WA4ZAS Repeater
Mt. Airy
Piedmont Rpt. Assn. | Bill Lamm, WA4BNY
Tom Lee, WB4OCG |
| 21. | WA4ZNA Repeater
Raleigh
Raleigh ARS | Ed Alderman, WA4PEN
Lee Johnson, WA4ZNA |
| 22. | WB4JWJ Repeater
Charlotte
WB4JWJ Owner | Bob Robinson, WB4JWJ |
| 23 | W4EHF Repeater
Fayetteville
Cape Fear ARS | William C. Finch, W4EHF
Sid Purvis, WA4VBC |
| 24. | WB4QGE Repeater
Winston-Salem
W4KGR Owner | Bob Reagan, W4KGR
John Huffman, W4IRE |
| 25. | WB4KIB Repeater
Gastonia
WA4AGR, WB4KIB
Owners | David Kever, WB4KIB
Joe Cherry, WA4AGR |

The North Carolina FM Repeater Association Inc.
by
Bill Parris, K4GHR

Early in 1971 a number of repeater owners and club representatives began discussing the numerous problem areas that were beginning to arise as a result of the rapid growth of two meter FM operations and repeaters. Recognizing the many problem areas that were beginning to emerge, and realizing the need for a organized effort to coordinate activity an the VHF bands, several repeater owners and representatives from repeater clubs met on Greensboro on March 14, 1971, to review the state wide problem. At this meeting the decision was made to form the "North Carolina FM Repeater Association, Inc." On April 18, again in Greensboro, the Association was formally created and a seven member Board of Directors was elected.

PURPOSE

The basic purposes of the Association are to:

1. Promote the exchange of information concerning repeater installation and operation among the amateurs of North Carolina.
2. Offer guidance and assistance in eatablishing repearers in the state.
3. Serve as a coordinating body for statewide VHF repeater and simplex frequencies.
4. Provide a unified voice for VHF FM interests.
5. Advance the general interest and welfare of amateur radio as a public service.

The Amateur service must work within itself to provide some degree of regulation and control on the VHF bands-- the Association plans to fill this

need in North Carolina. In the recent FCC ruling regarding repeaters, the following comments were part of the record: "Restriction of repeater operation to specific portions of the amateur bands above 50 mhz has not been adopted as proposed in the notice. Approximately one-half of the amateur VHF bands and 8 mhz of the 420 mhz band is being authorized for repeater usage. The Commission is persuaded by the comments and by observation that regional and national frequency planning and coordination by amateur radio operators themselves can result in the best spectrum utilization appropriate to the service. However, we are prepared to reverse this decision should plans and their implementation not occur within a reasonable period."

Let's not drop the ball on working together here in North Carolina-- we do not need any more regulations.

MEMBERSHIP

There are two classes of membership in the Association: (1) Full Membership is available to any individual or group that operates a licensed amateur VHF FM repeater which provides consistent service to an area of North Carolina and is available for use by the general amateur population. The repeater is represented in the Association by two licensed amateurs--they have one vote between them. These representatives are eligible to run for the Board of Directors.

(2) Associate Membership is available to any individual interested and /or active in VHF FM operations. Although Associate members do not have a direct vote on the Associations operations, except through their local repeater, they may serve on special committees, and do receive an annual repeater directory and data book of all North Carolina repeaters, quarterly newsletters, and other special bulletins.

DUES

Dues for Full Membership is \$6.00 annually. This

provides the two representatives with full membership privileges. Dues for the Associate Member is \$2.00 annually.

Board Of Directors

In the Fall of each year at a regular meeting of the Full Membership, a seven member Board of Directors is elected to lead the Association during the coming year. After the seven Directors are elected, the Directors themselves elect a president, vice-president, secretary/treasurer, and a FCC liaison representative. The Board meets at least once each quarter at various locations throughout the state.

Board of Directors for the 1972-1973 Year include:

Bill Simms	K4RUQ	Durham	President
Larry Sharpe	WA4JVD	Lexington	Vice- Pres.
Bill Parris	K4GHR	Salisbury	Sec/Tres.
Don Harris	W4BUZ	Greensboro	FCC Liaison
Jerry Tate	K4GMP	Wilmington	
Tom Lee	WA4OCG	Greensboro	
Bill Bridges	K4WHQ	Shelby	

MEETINGS

As mentioned earlier, the Board meets several times during the year. The Full Members meet twice-- once in the Spring and again in the Fall. Once each year in the Fall-- and normally associated with a Hamfest or state convention-- a general membership meeting is held.

COMMITTEES

The Association functions through the effective use of committees. The president appoints committees for the review and resolution of all types of problems related to VHF FM. Earlier committees appointed pursued such problems as repeater

frequency and tone access standardization for 2 meters, 450 mhz repeater control frequencies and others. Any member of the Association-- full or associate member-- may be asked to serve on a committee. Committee reports and recommendations are made at the Board of Directors meetings.

Only through a united effort on the part of individual repeater owners and clubs will the goals and aspirations of the North Carolina FM Repeater Association be realized. If you or your club currently operate a repeater, or if you have definite plans for placing a repeater in service, and you would like to become a part of this Association, please write for a membership application.

The Association has the potential for becoming the largest single organized voice for amateur radio in the state of North Carolina..... we would certainly like to have you contribute to this voice





THE RALEIGH AMATEUR RADIO SOCIETY'S 8TH ANNUAL

AN ARRL APPROVED

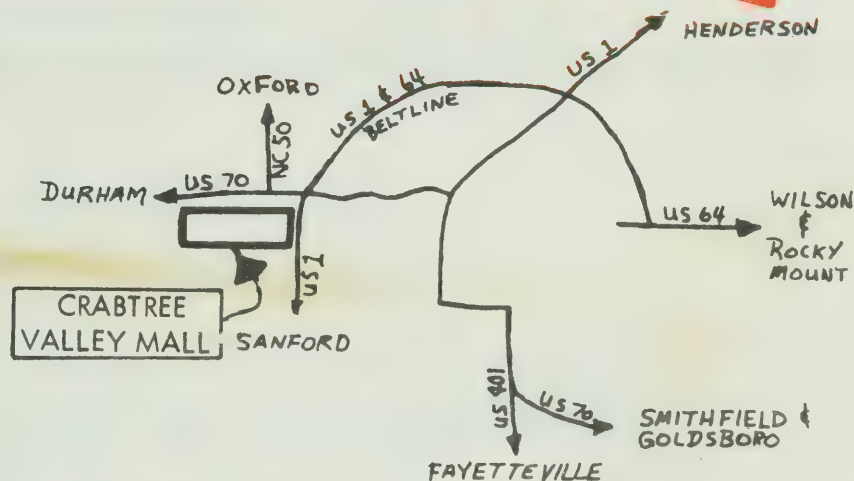
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\$3.00 GENERAL ADMISSION

ACTIVITIES BEGIN AT 9:00 A.M.

APRIL
20
1980

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RALEIGH, N.C.



PRIZES!!!

PRIZES!!!

PRIZES!!!

- 1st Prize — Choice of Kenwood TS120S HF Transceiver and PS30, 12 volt power supply, or Kenwood TS700SP Multi-mode 2 meter Transceiver. Vickers Electronics of Durham aided RARS in the purchase of this prize.
- 2nd Prize — Kilowatt Three-element Tri-band beam. This prize presented by RARS.
- 3rd Prize — Heavy duty CDR Rotator presented with the assistance of CDE, Fuquay, North Carolina.

MANY OTHER PRIZES WILL BE DRAWN ALL DAY SUNDAY!!!!



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WEST COMMUNITY ROOM ON SATURDAY EVENING,
7 till 11 p.m. Social and Door Prizes!



TALK-IN SATURDAY AND SUNDAY

WR4ACF (146.04/146.64)
WR4AOE (146.28/146.88)



SPECIAL INTEREST MEETINGS: Q.W.C.A., M.A.R.S., & OTHERS.

FOR ADDITIONAL INFORMATION, DETAILS, OR RESERVATIONS WRITE:
RARS Hamfest, P. O. Box 17124, Raleigh, N. C. 27619

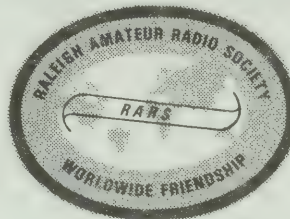


EDITOR:
C. T. WEST, WD4HSI
1611 Craig Street
Raleigh, N. C.



CLUB REPEATER:
WR4ACF (146.04/64)

CLUB CALL:
W4DW



"RALEIGH AMATEUR RADIO SOCIETY NEWS"

MAY 1980

ISSUE 123

LEADING EDGE

SHERMAN STARNES, W4TZU



STARNES

Leading Edge begins this month by extending a welcome to our hamfest visitors. We hope you have a nice day and can trade all your unwanted junk for some new treasures.

The Soviets appear to be readying another "amateur" satellite. Several stations around the world have reported hearing test signals from a station signing RS-3. Some more or less knowledgeable wags expect a May Day launch. More on this when something concrete develops.

Among the things that came out of the Charlotte Hamfest was a volume titled "OSCAR": The Ham Radio Satellites" by Dave Ingram, K4TWJ.

The first three chapters range from "How It All Began" to the latest developments. Discussions of the construction of the satellites and their funding is included. Chapter four covers setting up your OSCAR earth station with such subject as select-



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ing gear, antennas, and tracking aids. Chapters five and six provide tips on DX, double linking, operating mobile, establishing an operating plan and some calculator programs for tracking. Chapter seven describes commercial equipment from half a dozen manufacturers which is useful in OSCAR operation. A glossary defines some terms which might be foreign to the satellite neophyte.

The book is published by TAB Books and costs \$4.95.

Still on the subject of reading; if you are as fascinated by antennas as most hams are, you've got to read Steve Place's description of the Phase 3 spacecraft antenna systems in the April issue of QST. If you don't appreciate antennas you have to appreciate the design effort and testing that went into them.

Reports of over-the-horizon reception of OSCAR 7 and 8 Mode A transponders and beacons persist. Here at W4TZU the OSCAR 7 beacon was heard the afternoon of April 6 at 2115 UTC while the spacecraft was over Queen Maud land in Antarctica, twenty eight minutes before it came over the horizon.

OSCAR 7 continues to operate at low power due to failing

batteries. Telemetry indicates that some internal temperatures are increasing, a characteristic which preceded the failure of OSCAR 6.

OSCAR 8 is performing well as usual. Reliable orbital data for this spacecraft is limited to about three months due to variations in solar drag during this period of high solar activity.

The Phase 3A spacecraft, now to be called AMSAT 9 once in orbit, was to be shipped to French Guiana on April 16 where it is still expected to be launched May 23.



AMSAT

Radio Amateur Satellite Corporation

P.O. BOX 27, WASHINGTON, D.C. 20044

(202) 488-8649

DR. PERRY I. KLEIN, W3PK
PRESIDENT

RALLIGH AMATEUR RADIO SOCIETY, INC.

Thank you very much for your recent \$75 contribution to AMSAT. Donations to AMSAT are tax-deductible under Section 170 of the Internal Revenue Code.

Your donation in sponsorship of the Phase III satellite will help AMSAT meet the heavy expenses of this amateur satellite project. Without assistance and support such as yours, we could not hope to launch the Phase III series.

Thanks once again for your help.

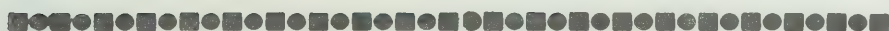
Sincerely yours,

Perry I. Klein
Perry I. Klein
President

UPCOMING DXPEDITIONS



Apr. 5	Mali	TZ4AQS
17	Aves Is.	YVØUSB
18	Burma	XZØONU
20/27	E. Malaysia	9M6MU
21	Norfolk Is.	VK9NM
21/30	Glorioso	FRØACD
		FRØACC
24/30	Johnston Is.	K6LPL/KH3
May 15	Sudan	DJ1US/ST3



QSL INFO

	<u>VIA</u>
YVØUSB	YV1TO
ZL2UW/C	ZL2UW
FRØACC	DK9KD
TZ4AQS	ON6BC
FKØBW	DJ3CQ
VK9NM	DJ3CQ
FK8DD	WB3JUK
5V7GE	VE2AS
HV3SJ	IØDUD
ZL2BCF/A	45A Bamber St. Wanganui, N.Z.

UPCOMING CONTESTS

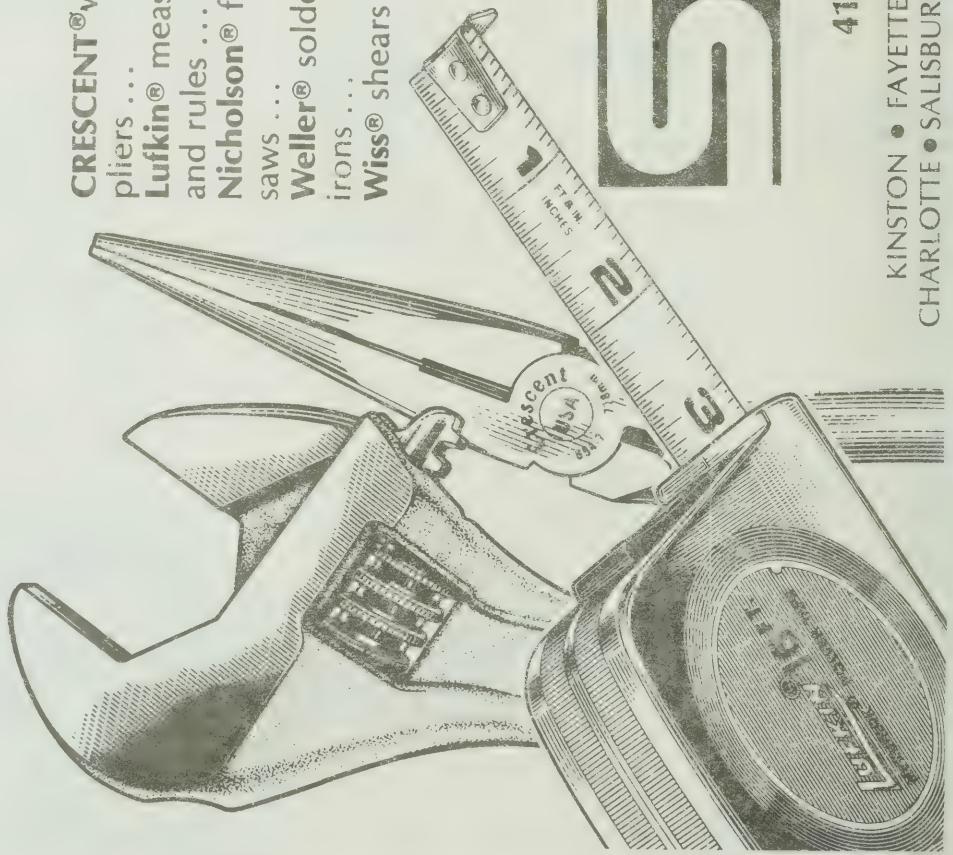
April	CQ WPX CW
June 14/15	VHF Contest
June 28/29	Field Day *

*The program for the May 7
RARS meeting will be
FIELD DAY 1980

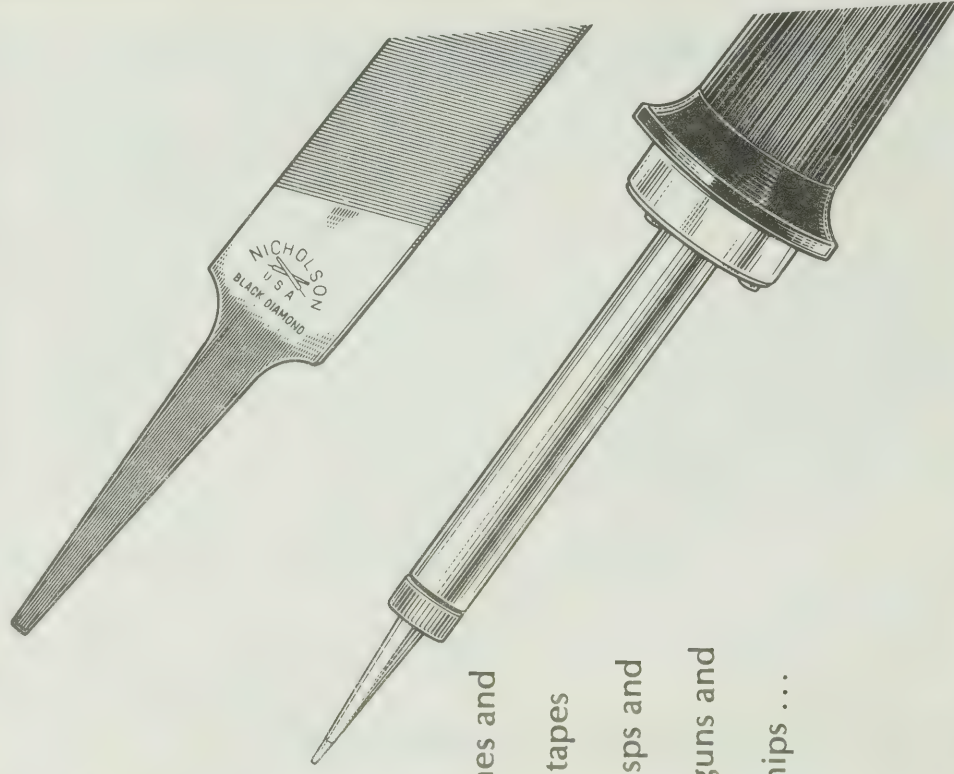


RON OATES

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WHEN AND WHERE TO LISTEN

	KHz	GMT
ZL2BCF/A	14236	1000
CEØZJ	28750	1230/1500
XZØONU	21330	0030&1300
	14160	1600
TY9ER	28750	1200
VK2AGT	14254	0630 (Wed)
ZD8TC	1827	0630
FK8DD	14215	0630
5V7GE	21275	1800/2000
	14260	2000/2300
HV3SJ	28590	1400 (Sun)
BV2B	14218	1000/1400 (Wed)
		2300/0200 (Sat)
D68AQ	21290	1815 (Wed)
W7PHO Net	21.340	2400 (Daily)
	KC6MJ, HL9WM, VS6DX, VS6CX, YBØABT, 9V1TL, WB5LBJ/DUG, KG6SW, HMLQD, YBØWR, S2BTF, JT1AN	
P29JS Net	14220	0700 (Daily)
	VK2AGT, KX6, KHZ, DU	
80 Meters	3795	0300 (Daily)
	3V, CN8, EA6, EA8, ISØ	

73 ES GUD DX
Ron, AA4VK

ROAMIN' THE BANDS

WITH DOC



G.C. COBB

"DOC"

Now that WARC '79 is over and we are assured that amateur radio will continue for awhile, it seems a good time to analyze just where we are as we begin the decade of the 80's.

Amateur radio has undergone some drastic changes in the last decade and will undoubtedly do so in the next. The recent decision to allow the ASCII code on the ham bands, (effective Mar. 17, 1980), is welcome news especially to the computer owners in our fraternity. I know of several hams in this area who are planning to be on the air with ASCII rtty very soon.

The new allocations at 10, 18, and 24 MHz have stirred a lot of interest also. We will probably be allowed to use the 10.1 to 10.15 band by the end of 1981, but don't hold your breath on the other two! Word has it that it will probably be the end of the 80's!

New equipment that will cover these bands has already been released but I think one would be wise to adopt a wait and see attitude at this early stage. There are going to be some engineering change kits to hit the market for the existing rigs, and many articles on engineering your own changes are already in the hands of the popular magazine editors.

Added excitement for Oscar buffs is the upcoming launch of the Phase III satellite. This new form of amateur communication is most certainly the wave of the future and we all should become better acquainted with its idiosyncrasies. RARS will try to keep you informed on this as well as all the new and exciting modes with informative meetings and newsletter articles.

As most of you know, I am one of those nuts who try to operate most of the bands and several modes. I can be found from 160 m to 2m on any given day and operate ssb and cw on a regular basis as well as dabble with slow scan and rtty. I have a few Oscar contacts have even played with fast scan TV (on 432 MHz what you may call a jack of all band master of none! Certainly, spreading yourself thin is not the way to get DXCC quickly nor is it the way to become the well known big gun of a particular band-mode. But, I have a lot of fun, (which is the name of the game), and hardly a week goes by that I don't learn something new.

I set myself a goal this past winter to complete WAS on 160 m. Well, I failed, the elusive Hawaii has been on FOUR times in January alone and I still don't have it. Plans for next winter are already formulating. Let's see, new antenna, new low noise loop for receiving, maybe some speech clipping....I wonder. See, the planning is most of the fun in completing anything in this hobby.

Six meters has been a big disappointment this winter. There have been very few F2 openings and none at all since January, (that I know of). With the Solar Flux off my graph and the sunspot number the highest in 20 years, and the sun in a quiet state, we thought we would have some really good times on 50 MHz! It's been a real let-down. Maybe it will still open up. I hope so. Six is fun when its open.

Some of the guys in RARS are playing around with very high speed CW using their computers to generate and read CW at speeds of 75 WPM and up! They have been having some really good results with this mode and works quite well especially for handling traffic. I suppose that the new ASCII approval will shift the emphasis to that, however.

Some of you have been asking about 80 m DXing. I seem to be one of the few in this area that work hard at this band. The real trick, if you can call it that, is to know the propagation and to use it! The D-layer absorption requires that both stations be in darkness, or

nearly so, for reliable contacts. A fact learned early about this band is that the signals are stronger at sunset on the western end of the path and at sunrise on the eastern end. So if you want, say France, try at sunset locally or again at French sunrise, about 0600 Z now.

If, on the other hand, you want Hawaii, try at sunset Hawaii time or at sunrise local. These facts are well known to 80 m DXers along with some other little quirks of these frequencies. Start with modest goals on this band and you will probably be surprised. I will pass along a tip or two each month for awhile looking toward this fall and winter, the real DX season for 80 meters.

Well, we've rambled about over quite a few subjects, which is the reason for the title of this column. I hope you haven't been too bored and that there was something to perk up your interest in a new mode or band to try.

73 es Good Hamming, Doc W4YZX

WELCOME
TO
RALEIGH-
RARS COUNTRY!



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AARON E. FUSSELL

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LEGISLATIVE STUDY COMMITTEES:
RESCUE SQUADS
PUBLIC SCHOOL LAWS
REQUESTING FOR 1981-1983:
APPROPRIATIONS
AGRICULTURE
HIGHWAYS

TO THE NORTH CAROLINA HOUSE OF REPRESENTATIVES

DEAR WAKE COUNTY CITIZEN:

I am a candidate for re-election to the North Carolina House of Representatives from Wake County and would like to have your vote and support. As a freshman legislator, I learned by diligent work and observation and I am happy and grateful for your interest and support. My record shows perfect attendance at all sessions. Five bills that I introduced have been ratified and eight bills that I co-signed have been ratified. I have been assured that two others will be considered in 1980.

We approved major programs as follows: utility reform, the Primary Reading Program, stronger economic development, speedy trials and fair sentencing, an increase in the exemption for dependents, aging and retired help and exemption, and some relief for all taxpayers, the family violence bill and the juvenile code revision bill. The General Assembly enacted a Balanced Growth Policy Act that will help attract jobs to all parts of our state. All of these will benefit Wake County.

Enough money has been provided to put the Primary Reading Program into all 9,900 first, second and third grade classrooms by the Fall of 1980. Class sizes in the fourth, fifth and sixth grades, and in the junior high schools, will be reduced. The pay for bus drivers and substitute teachers has been increased. We also approved a pay raise for teachers and state employees and approved the State Board of Education adopting a salary schedule for support personnel. Many other programs too numerous to list were approved.

Conducting a campaign is a tremendous undertaking. I need your help personal support and financial help. I am asking you to make an investment in good government by contributing to my campaign.

Your support of my candidacy for the North Carolina House will be greatly appreciated and will make you directly and personally involved with the issues that come before our state government. To this end I continue to pledge to you my full time.

Sincerely yours,

Aaron E. Fussell

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CAMPAIGN HEADQUARTERS 211 WEST DAVIE ST. / RALEIGH, N.C. 27602 / TELEPHONE (919) 834-7666 / PAID FOR BY FUSSELL CAMPAIGN FUNDS

YLog

Murray Hake W6MVZ



HAKE

As a YL, it has been my regret that I have not gotten to know other YLs as well as I would like. The reasons for this are mainly, I think, because YLs do not spend as much time on the air as the OMs do and also there are fewer of us. In an attempt to remedy this situation, I am going to try to introduce the local YLs to each other through this column.

This month, please meet Ann Bradley, WA4APK. Ann is Secretary of RARS as well as manager of the RARS 2M net. She was born in Atlanta but moved around with her family until her high school years when they all returned to Atlanta. It was here in Atlanta that she met her future husband, Jim Bradley. After their marriage, they lived various places, as dictated by Jim's employers, finally landing in Raleigh.

Ann got into ham radio with a sort of double prodding. Jim's dad, who lives in Chata-

nooga, renewed his amateur license and urged Jim to get his. Ann got interested and enrolled in the Novice class with Jim. They got their Novice tickets but Ann lost interest and allowed her license to lapse. However, Jim began bugging her and she regained her Novice ticket. At the 1978 Hamfest she got her Tech and her General in the Fall. Up to this time, Ann had not been on the air much, but this changed with her election to the post of Net Secretary for the 2M net. Now she is working hard on WAS.

At the Raleigh Hamfest last year, Ann not only got her Advanced, but passed the 20 wpm code test. I hope by the time this appears in print she will have her Extra Class license.

For further information on Ann's activities, I refer you to her delightful article elsewhere in this issue.



ANN BRADLEY, WA4APK

REFLECTIONS ON FIRST
YEAR OF OPERATION

By

Ken Boggs, KB4RV

It seems like it was a very long time ago that I screwed up my courage and committed myself to fill in the 610 and sit for the Funny Candy Co. exam. In fact, it was only last April 21, 1979. I was one of nearly 400 people that struggled with questions that under other circumstances would be quite obvious. None-the-less, I was

pleasantly surprised to find myself passing. I enjoyed the gasp of surprise on the part of the examiners as I went from no license straight thru to advanced.

I had controlled my urges prior to taking the license exam but now I could hold back no longer. I lost little time in reviewing ready-made rigs and rapidly purchased one. Then I waited. And waited. Until near the first of June my ticket showed up. Immediately I was on the air and in QSO with the salesman from Vicker's who had sold me my rig. DX from Leesville Road to Durham.

At the time I first got on the air, I operated with only a vertical mounted at ground level. I don't really mean "only" because I have had very satisfactory results with my multi-band trap vertical. I operate with four radials buried just at ground level on 80, 40, 20, 15 and 10 meters. I found that patience and careful tuning brought me contacts from Crawley England, Civitauscchia Italy, Rio DeJanero Brazil, Verden Germany among others. I found that operating 200 watts PEP input on 15m was best for me.

As the summer and my spirits rose to greater levels I purchased a half-dozen books on antennas. I found just what I could use in the form of "wire beams." This amounts to no more than stringing wire in

the pine trees in such a form that mother nature thinks its a beam. I set to work. But my ladder and daring ran out at about 15 feet above ground. Not to competetive with 100 foot towers you say? Wrong but there is a catch. My land slopes sharply downhill where I put up my 20m 5element wide spaced beam. Though proximity to the ground raises the angle of radiation, the sloping ground makes up for this. I started to work those many DX stations on 20meters. Now all of Europe and Africa started to respond to my call. At this time of writing, I am proud of having 39 countries confirmed with many more in the bureau pipe.

Then there was the fiasco with my 10m beam. But I'll save that story for another time. What a great year for being a ham. I've worked SSB as well as CW; 80m thru 10m; rag-chew, nets with traffic; phone patch and one-ways; short QSOs, hour long exchange and contests. Now I'm becoming qualified as a MARS station - AFB2UW. It's been fun and I hope this year turns out even half as good. 73s. Ken.

RARS PUBLIC SERVICE

by

Audrey Browne, WB4ZSM

As part of the Raleigh Amateur Radio Society's policy of public service a number of our members provided communication facilities for Hackney's Great Raleigh Road Race '80 on March 30.

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In order to insure the safety of the runners these Amateur Operators were stationed at intervals along the route from the starting point at the State Capitol Building, along Hillsborough St. to the finish line at the State Fairgrounds. The distance was 6.2 miles.

Our sincere thanks to all who participated in this fine Public Relations effort; to Bert W4FMN who organized it; to Jim WA4A00 who was with the starters at the State Capitol Building; to Ann WA4APK whose post was across from the Velvet

Cloak; to Ray W6SRF at Don Allen Dr.; to Joe WA4ENZ at the railroad crossing; to John WB4VIM at Blue Ridge Rd.; to Bruce WD4DTI and Rollin N4AWR at Blue Ridge Rd. gate entrance; also to Wally W4PRQ and to Murray W6MVZ who stood ready at their home QTH's to relay any messages through the 04-64 Repeater.

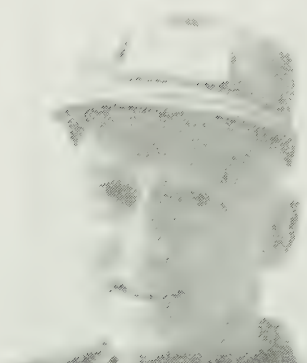
Fortunately no medical emergency arose. Over 4000 runners, enjoying their hobby, were made safer by the efforts of these Amateurs.

CRABTREE VALLEY

MESSAGE CENTER

by

Bert Bailey, W4FMN



BAILEY

Hey what's this MC. Well, my friends, its a brief way to describe that third-Friday-each-month foray into the Mall passing traffic, or operating a Message

Center. The idea man behind this most successful enterprise is the ubiquitous Herb, N4UE. And Herb has been the most faithful and dependable. How many "idea men" follow up with grind-it-out performance? Not many, in my experience. Herb drags out all the signs, the forms, insures that tables and chairs are in place--and replaced after the shooting's over. He has done this for at least the 6 years that we have been operating out there. I say We--it's been 0.9 Herb and me. Many nites we are alone. Yet here is an outstanding opportunity to meet the

public and perform good solid service, greatly enhancing the ham image. So why is the Crabtree Valley so destitute of hams on the third Friday of each month? We need help, gang; let's redouble our efforts and make it out more often. One thing about it's for sure --- get the hams out and the civilians will also come out. They get tired looking at the same 2 pairs of beady eyes every third Friday. The MORE hams are there, the MORE traffic is generated. Must have

something to do with the gregariousness of homo sapiens. Whatever the reason, the statement is 100% correct. So, make an effort, join us out at Crabtree. It's only for a short time, between 1930 and 2130 hours. Bring the XYL and harmonics. While they shop, you can put in a good act for RARS and all other hams. Musn't forget Herb's alma mater or MINE, like The Cary ARC and the Wake Tech ARC. There you have it, guys and gals. See you at Crabtree MC.
* * * *Bert W4FMN* * * * *

TRAINING NEWS

by

Bob Johnson, AA4L
RARS Training Director

Welcome to the Capital City and to the RARS Hamfest. Some of you may be area residents who are not affiliated with a local club. RARS would like to make you aware that amateur radio classes are taught on a regular basis through the N.C. State University Department of Continuing Education. Classes are conducted at the McKimmon Center on Western Boulevard. Instructors for the Novice course are provided by the Cary Amateur Radio Club, and the General and



JOHNSON

Technician course is conducted by RARS. These classes are registered with ARRL, who provides the course outlines. Each class runs twelve weeks, at one evening per week. A five dollar fee pays for the use of the excellent facilities. Two complete classes are run each year, with the Fall semester starting in September and the Winter, in January.

If enough interest were shown, RARS would be amenable to converting one of the General/Technician courses to an Advanced/Extra session. However, many higher class license candidates have found the present General Course a useful review. The classes to be taught this Fall will be the first directed toward the new FCC exams. Those of you who have not carefully read the new FCC study guide in March QST would be well advised to do so. It is apparent that there will be considerable change in the exam contents.

If you are interested in these classes, pick up a catalog at the McKimmon Center, or write AA4L, c/o the RARS P.O. Box. 73.

Bruce Eggers,

WA9NEW, says:

There once was a new ham named Lou,
Who didn't know what he could do.
His rig's RFI
Made his neighbors say why
Shouldn't we all get together and sue?

MARS at the RARS Hamfest

At the 1980 RARS Hamfest there will be meetings conducted for some of the Military Affiliate Radio System (MARS) groups operating within the state. It is very appropriate for MARS participate at this and at other hamfests because of long association between MARS and the Amateur service.

Through all of its years, amateur radio and military communications have from time-to-time had their paths entwined. Examples of these are:

1. The providing of a pool of trained communicators during both the First and Second World Wars.
2. Being in the forefront of communication developments which were later acquired by the military.
3. MARS

MARS is of special interest. To be a member of MARS one must be a licensed radio amateur. About four percent of the licensed amateurs are simultaneously members of MARS.

MARS is three separate organizations with each connected with a specific branch of the military:

Air Force
Army
Navy/Marines

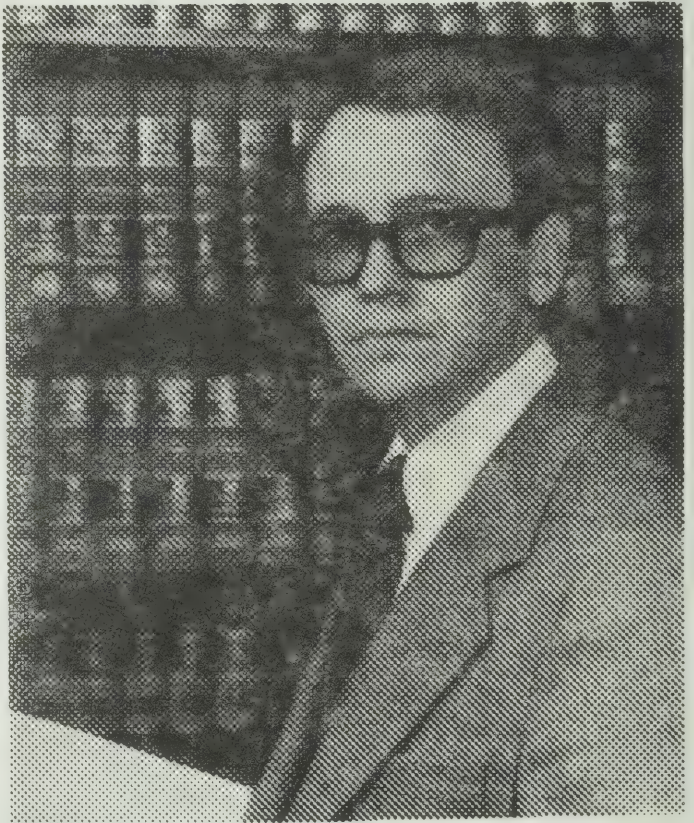
Each has its own command organization and structure. However, the objectives of each group are similar. These are:

- a. Provide auxiliary communications for military and civil officials during periods of emergency.
 - b. Provide primary communications capability for base disaster response forces.
 - c. Assists in effecting normal communications under emergency conditions.
 - d. Handles morale and quasi-official record and voice communications traffic for armed forces and authorized US Government civilian personnel stationed throughout the world.
 - e. Creates interest and furnishes a means of training members in military communications procedures.
 - f. Provides a potential reserve of trained radio communications personnel for military duty, when needed.
 - g. Conducts an appropriate CONUS-wide amateur radio program as a part of the annual celebration of Armed Forces Day.
- How did all this come about? In 1925 the Army realizing the benefits of a closer working relationship with the amateur radio service participated in a meeting

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with the ARRL at the latter organizations headquarters in Hartford. Out of this came the Army Amateur Radio Service or AARS.

From 1925 until the outbreak of war on December 7, 1941 AARS grew in both membership and the services it performed. It participated in a large number of contingency situations and disaster emergencies and inaugurated handling of welfare and morale messages and traffic for members of the Army. Along with all amateur radio, AARS operations ceased upon declaration of war. During the war many members of AARS were of course involved with communications in the military. For a considerable length of time in the pre World War II year AARS operated within the amateur bands.

After World War II ended the amateur radio service went back into operation. In 1948 the military-amateur affiliation started up once more with the name Military Amateur Radio System. Until 1950 membership was limited to radio amateurs in the active military and reserves. In November of that year membership was thrown open to civilian amateurs 21 years or older as affiliate members. Operation was now completely on military frequencies outside the amateur bands.

During the succeeding years MARS expanded to encompass the three services and minimum membership age was lowered in steps to its current level of 14 years. The

word amateur in MARS was changed to affiliate to emphasize both the professionalism of the system and the increasing importance of the civilian members.

Over the succeeding years there is a long trail of successful participation by the three MARS groups in various emergency and contingency operations as well as handling huge amounts of morale and welfare traffic.

The handling of morale and welfare traffic reached its peak during the Vietnam conflict. The regular amateur service could not be used because Vietnam was a restricted country. Untold amounts of traffic was handled, back-and-forth, to military personnel caught up in that conflict in Southeast Asia.

As part of the days activities at this years RARS hamfest plan to attend one or more of the MARS meetings. Then become a member of one of the MARS programs and have the pleasure of augmenting your amateur radio activities with a new dimension of radio operating while simultaneously realizing that you are performing a service for your country.

The particular interest of the author of this article is Air Force MARS. The Air Force MARS Program welcomes members who want to join, go through the prescribed training course, which is conducted on the air, and who will then actively

participate in the program. Active participation in the program requires as a minimum the capability for operating SSB on 4580 khz.

For further information on the Air Force MARS program attend the Air Force MARS meeting at the RARS Hamfest or at a later time contact the State MARS Director:

B. E. Sherrill
KO4P/AFF2NC
4531 Revere Drive
Raleigh, NC 27609
787-0857

Norman Plaks
KN4G/AFB2BW

MINUTES OF THE MEETING

April 2, 1980

The regular monthly meeting of the Raleigh Amateur Radio Society was held in the West Community Room at Crabtree Valley Mall on April 2, 1980. The meeting was called to order by President "Doc" Cobb, W4YZX, and members and guests were welcomed. The attendance roster was signed by 68 members and guests.

President Cobb asked for reports from the following committees:

F M Committee - George Richards, WA4EKJ, reported that the repeater has been operating for the past several weeks at about a 5 watt

level. The aim is to have the power boosted up to about 50 watts. Phone lines are installed and the autopatch will follow. Chuck Littlewood, K4HF, is heading a committee to investigate the rules and procedures we will need to follow in operating the autopatch.

Newsletter - C. T. West, WD4HSI, reported that again we are requesting members to submit copy to be used in the Hamfest edition of the Newsletter. Last years edition was the biggest ever published and we hope to top that this year. There are plans to upgrade the newsletter. C. T. hopes to soon have it on a self-sustaining basis through advertisements and to eventually have the newsletter entirely type-set. The one vital commodity is material. Members are urged to write--and submit articles for publication.

Upgrade Classes - Bob Johnson, AA4L, reported that the winter class will end after one more session. However, classes are already scheduled for next fall and winter at McKimmon Center. Upgrade sessions may be held again this summer for Advanced and Extra.

Hamfest - Jack Kenny, WB4MCU, reported that Hamfest preparations have been pretty well taken care of except for a shortage of volunteers. Committee Chairmen were asked to report their needs and solicit help to

fill the missing slots before the telephone committee goes into operation. It is hoped that members will be willing to devote an hour or two to help make the hamfest a success again this year. It's your hamfest!

The following hamfest dates were announced:

Raleigh, N.C.-----April 20
Dayton Ham-vention--April 26-27
Blueridge ARS-----May 4
Greenville, S.C.
Durham FM Assn.-----May 17
Durham, N.C.
Gastonia, N.C.-----May 24-25
Roanoke, Va.-----May 24-25

President Cobb introduced the President of N.C, State Radio Club, Charles Osborne, WD4MBK. Charles presented an enlightening program concerning the operation of the club station, W4ATC, and most particularly on Moon Bounce Operation.

Names were drawn for door prizes. N4CWU will be guest writer for the newsletter, and Rollin Ransom, N4AWR, won the coax. The meeting was adjourned following refreshments and fellowship.

Ann Bradley, WA4APK
Secretary, RARS

MINI-REVIEW OF

ICOM 255A

by

Lynn Pendleton
K4NYV



PENDLETON

A recent purchase of an ICOM 255A at the Charlotte Hamfest has put a very flexible piece of two meter gear in my car or hamshack. The Transceiver has all the features typically found on the popular synthesized rigs and in addition it has the capability of scanning five assigned channels or everything between two programmed frequencies. An auto-stop feature allows the user to scan and stop on a busy or a non-busy frequency. Another strong point is the excellent receiver that

is typical of ICOM. A pair of high quality monolithic crystal filters and ceramic filters help in this respect. Dual VFOs allow for any programmed offset and can be used independently. In addition there is a ± 3 KHz RIT control. The combination of 25 watts and excellent receiver allow me to "hit" approximately 20 repeaters with my Ringo Ranger and 30 or more repeaters with my single 11 element beam.

TRAFFIC NETS

Have you ever tuned across a traffic net on 75 or 80m and wondered why anyone would spend so much time learning all those "complicated" procedures? Let me take a few minutes of your time to try to explain why I think it's time well spent.

One of the justifications for Amateur Radio's existence is to provide a public service. When there is no longer any evidence of public service being provided, we had better be concerned about our future. Now, I don't mean just that we can provide free message service for birthday greetings,

Christmas wishes, etc.; they can be handled by the Postal Service or the telephone system. I do mean that we can (and do) provide an organization of TRAINED operators who are capable of handling bulk traffic in an efficient and reliable manner.

There is a system called the National Traffic System (NTS), which provides the organization necessary to accomplish this end. It was established after WWII by the ARRL, and to this day, no one has come up with a better, more efficient scheme.

The training of operators during "non-emergency" times produces a minor side-benefit

RALEIGH AMATEUR RADIO SOCIETY, INC.

MEMBERSHIP ROSTER

APRIL 3, 1980

CALL #	CLASS	NAME/ADDRESS/PHONE NO.			
		Lowell Anderson 3800 K Bonneville Ct. Raleigh, NC 27604 Res.: 876-4934; Bus.: 872-3020	WA4AFB	G	Alan Browne 4419 Gates St. Raleigh, NC 27609 Res.: 781-4299
WB4SPC	A	James G. Baldwin 3708 Willow Creek Raleigh, NC 27604 Res.: 876-8154; Bus.: 828-6292	WB4ZSM	G	Audrey Browne 4419 Gates St. Raleigh, NC 27609 787-4299, 782-3168
WB4TQD	T	Michael Bezera 740 E. Crestwood Drive Garner, NC 27529 Res.: 772-7727; Bus.: 553-5076	WB4PZW	G	Paul R. Browne 4419 Gates St. Raleigh, NC 27609 Res.: 787-4299; Bus.: 556-4031
KB4CY	A	David T. Biggers 5319 Fireside Drive Raleigh, NC 27609 Res.: 872-5134; Bus.: 836-6023	AA4BA	E	Charles H. Casey Route 2 Garner, NC 27529 Res.: 772-1428
W8DTD	A	Peter H. Bliss 8701 Kings Mill Road Raleigh, NC 27614 Res.: 847-8704; Bus.: 872-4400	WD4PJV	N	Charles Clark 4805 Lakemont Drive Raleigh, NC 27609 Res.: 782-9528; Bus.: 779-2900
KB4RV	A	J. Kenneth Boggs, Jr. 8704 Cliff Top Ct. Raleigh, NC 27612 Res.: 782-8646; Bus.: 543-4134	W4YZX	E	G. C. Cobb 6120 Winthrop Drive Raleigh, NC 27612 Res.: 787-5900; Bus.: 549-8481
WA4APK	A	Ann M. Bradley 5207 Denise Drive Raleigh, NC 27606 Res.: 851-2437; Bus.: 773-7730	WD4LXZ	N	Tim Cole Apt. 5, 3828 Colby Drive Raleigh, NC 27607 Res.: 872-1445
WA4AOO	A	Jim E. Bradley 5207 Denise Court Raleigh, NC 27606 Res.: 851-2437; Bus.: 833-0635 J. W. Bradley Route 2, Box 237 Harrison, TN 37341	K4MC	E	Bob Corns 1619 Oberlin Road Raleigh, NC 27608 Res.: 828-6005; Bus.: 834-4991
W4PRQ	G	Wallace Brame 717 Georgetown Road Raleigh, NC 27608 Res.: 828-5088; Bus.: 834-1350	WA4GBE	T	Harold Crumley 3720 Marlin Court Raleigh, NC 27604 Res.: 876-0587; Bus.: 876-0587
KA4FQC	A	Frank Bridges 4712 New Bern Avenue #53 Raleigh, NC 27610 Res.: 833-5088; Bus.: 834-1350	WD4ISO	T	Raymond Dement Rt. 5 Zebulon, NC 27597 Res.: 266-3731
WD4NAC	G	Charles Brown 721 Dawnwood Court Raleigh, NC 27609 Res.: 781-9735; Bus.: 833-1991	N4BYN	G	Stephen Derbyshire 1120 Caspan Street Raleigh, NC 27610 Res.: 755-1622; Bus.: 733-3569

WD4PXN		Bill Edwards 8405 Stonegate Drive Raleigh, NC 27609 Res.: 847-0065	N4EX	E	Rich Homolya 3620 Charterhouse Raleigh, NC 27612 Res.: 781-2133; Bus.: 872-3020
K4BWC	A	Billy Edwards, Jr. 4209 Live Oak Road Raleigh, NC 27604 Res.: 832-5151; Bus.: 828-0362	AA4L	E	Bob Johnson 11305 Rums Hill Raleigh, NC 27614 Res.: 787-6044; Bus.: 836-5933
WA9NEW	A	Bruce A. Eggers 14 Judith Road Chelmsford, Mass. 01824	K4EMW	E	Ronald P. Johnson 6300 Lewisand Court Raleigh, NC 27609 Res.: 847-3686
WB4EOV	B	William R. Feehan 4412 Yadkin Drive Raleigh, NC 27609 Res.: 876-1653; Bus.: 781-6575	K4KZZ	A	George A. Kalell 3520 Brentwood Rd. Raleigh, NC 27604 Res.: 876-0504; Bus.: 781-2010
WA4JCS		Walter E. Fiscus, Jr. Route 10, Box 345 Oxford, NC 27565	WB4MCU	T	Jack Kenny 712 Pebblebrook Drive Raleigh, NC 27609 Res.: 876-0998
WB4THL	G	Huland B. Gardner Route 4, Box 250 Wilson, NC 27893 Res.: 243-2555; Bus.: 399-4153	KA5CAX	T	Wayne King 4500 Yadkin Drive Raleigh, NC 27609 Res.: 782-8293; Bus.: 541-2081
WB4ZVZ	T	James C. Grady Box 158 Kenly, NC 27542 Res.: 284-3931; Bus.: 284-4153	KA4JJY	T	Jan B. Kydd Box 8 Shangri La Apex, NC 27536 Res.: 362-9837; Bus.: 362-8391
WN4IMZ		C. V. Gwyer	WA4VXL	G	Glenn Lampley 1911 Talloway Drive Cary, NC 27511 Res.: 362-5923; Bus.: 836-6318
WB7VIO	A	Jerry Haigwood 4204 Waterbury Road Raleigh, NC 27604 Res.: 872-6906; Bus.: 834-5251	AA400	E	H. Scott Langdon 2807 Wautauga Drive Greensboro, NC 27408 Res.: 292-0335
W6MVZ	G	Murray Hake P. O. Box 10643 Raleigh, NC 27605 Res.: 851-8025; Bus.: 737-2256	WA4BOV	A	James Leatherwood 4501 Leaf Ct. Raleigh, NC 27609 Res.: 787-5569; Bus.: 737-2773
WD4MRD	T	Joe Henderson 2221 Coley Forest Raleigh, NC 27607 Res.: 787-6624; Bus.: 836-6201	K4HF	E	Chuck Littlewood 2005 Quail Ridge Road Raleigh, NC 27604 Res.: 872-6555; Bus.: 829-3211
WA4PLH	A	Donald Heppner 3114 Westbury Dr. Raleigh, NC 27607 Res.: 787-7276; Bus.: 836-7081	KB4RR	A	Joseph Love 3704 Eakley Court Raleigh, NC 27606 Res.: 851-0577; Bus.: 737-3322
W4DNN	A	Daniel H. Hess 4705 Yadkin Drive Raleigh, NC 27609 Res.: 787-7276; Bus.: 836-7081			Russell O. Lyday, Jr. 3506 Keats Place Raleigh, NC 27609 Res.: 787-4137; Bus.: 541-6957
K4UOO	A	William J. Hillburn 3116 Arrowwood Drive Raleigh, NC 27604 Res.: 876-5269; Bus.: 828-6201	WD4MUM	T	Robert E. Marsh 5320 Edgewood Drive Raleigh, NC 27609 Res.: 782-0538; Bus.: 836-5676
WA4ENZ	A	Joseph Homovec 4135 Rockingham St. Raleigh, NC 27609 Res.: 787-2150; Bus.: 872-3020			

N4AYJ	G	Mike Matzinger 3413 Doyle Rd. Raleigh, NC 27607 Res.: 787-4720	WD4PDU	A	Arthur L. Poole 2308 Blacklan Circle Raleigh, NC 27610 Res.: 833-7440; Bus.: 833-8267
W2KHG		Stuart Meyer 24417 Newton Street Vienna, Va. 22180	N4AWR	A	Rollin M. Ranson 5017 Devonwood Ct. Raleigh, NC 27604 Res.: 876-4299; Bus.: 832-5027
W4MGR	G	Tom Moody 4102 Laurel Ridge Rd. Raleigh, NC 27612 Res.: 787-1221; Bus.: 773-3390	K4IXW	G	Carl Rice 1401 Hardimont Drive Raleigh, NC 27609 Res.: 876-3294
WB4VIM	T	John E. Neal, Jr. 4808 Sweetbriar St. Raleigh, NC 27609 Res.: 782-2995; Bus.: 836-6689	WA4EKJ	T	George Richards 6041 Bellow St. Raleigh, NC 27609 Res.: 782-3058; Bus.: 872-3020
AA4VK	E	Ron Oates 9908 Waterview Road Raleigh, NC 27609 Res.: 834-3279; Bus.: 836-6063	WB4SDU	T	Ralph Rigdon 2449 Bertie Drive Raleigh, NC 27610 Res.: 834-2803; Bus.: 755-6660
WD4NLX	A	Ferenc Pankotay 4025 Camelot Drive Raleigh, NC 27609 Res.: 872-7588; Bus.: 828-4451	WD4MZX	T	Wayne Robarge 717 Merrie Drive Raleigh, NC 27606 Res.: 851-1496; Bus.: 737-2635
WA4PDP	A	Edwin H. Patterson 4106 Pine Drive Smithfield, NC Res.: 934-0905	WB4DRJ	A	Lee S. Rogers 5312 Kirkwood Court Raleigh, NC 27609 Res.: 787-7846; Bus.: 543-5576
W4WYV	E	George Peacock 6604 Johnsdale Road Raleigh, NC 27609 Res.: 876-0071; 876-0050	WD4GXO	A	Richard Rohrer 3217 Longbow Drive Raleigh, NC 27760 Res.: 872-5379
KA44JKA	N	Cecil E. Pearson, Jr. Route 1, Box 161A9 Garner, NC 27529 Res.: 772-8330; Bus.: 779-0809	KO4P	E	Bobby E. Sherrill 4531 Revere Drive Raleigh, NC 27609 Res.: 787-0857; Bus.: 755-4366
		Howard Pearson 209 Bertie Drive Raleigh, NC 27610 Res.: 834-1451; Bus.: 834-4991	WA4SNC	G	Wayne Shevlin 217 C Millbrook Road Raleigh, NC 27609 Res.: 781-4144; Bus.: 755-4420
WA4YOM	A	Jim Peeler 3513 Leonard St. Raleigh, NC 27607 Res.: 787-6036; Bus.: 787-2873	N4SW	E	Walt Short 5515 Castlebrook Drive Raleigh, NC 27604 Res.: 876-1166; Bus.: 836-5191
K4NYV	E	Lynn Pendleton 961 Wimbleton Drive Raleigh, NC 27609 Res.: 787-2039; Bus.: 872-3020	KA4IWX	N	Martha Silver 3118 Eton Road Raleigh, NC 27608 Res.: 787-9882
		Alan Plaks 1205 Country Ridge Raleigh, NC 27609 Res.: 876-4192	WB4YBF		Paul Sims 4814 Greenbriar Rd. Raleigh, NC 27609 Res.: 772-8097; Bus.: 836-6958
KN4G	E	Norman Plaks 1205 Country Ridge Raleigh, NC 27609 Res.: 876-4192; Bus.: 541-2733			

W4TZU	A	Sherman Starnes Rt. 1, Box 99 NC Franklinton, NC 27525 Res.: 494-5169; Bus.: 828-4441	N4CTM	T	Ford Walker 1600 Pineview Drive Raleigh, NC 27606 Res.: 851-0515
WA40DT	T	John P. Swain, Jr. 3420 Churchill Road Raleigh, NC 27607 Res.: 787-5417; Bus.: 833-3826	KA4FEN	N	Frank C. Weiss 5409 Live Oak Tr. Raleigh, NC 27612 Res.: 781-9049; Bus.: 836-5845
WB4DCM	A	Charles Swindell Route 5, Box 422 Zebulon, NC 27597 Res.: 269-7194; Bus.: 733-2032	WD4HSI	G	C. T. West 1611 Craig St. Raleigh, NC 27608 Res.: 834-5420; Bus.: 833-3014
WB4HHM	A	Dell Thomas 1151 SW 17th St. Boca Raton, FL 33432	W4ACY	A	L. Phil Wicker 4821 Hilltop Drive Greensboro, NC 27407 Res.: 299-9187
WB4HMI	B	Harry Thompson 509 Harvard St. Raleigh, NC 27609 Res.: 787-5593; Bus.: 733-3697	W4ANU	A	Harry M. Wiggs 1625 Sunrise Ave. Raleigh, NC 27608 Res.: 829-0417
W6SRF	G	Raymond Tissot 4508 Embleton Drive Raleigh, NC 27612	KB4BH	A	Paul R. Wilder 1008 Powell Drive Raleigh, NC 27606
N4BYJ	G	Al Turner 1812 Larimer Road Raleigh, NC 27606 Res.: 851-2129; Bus.: 541-2939	WB4PXS	G	Jack D. Williams 1000 Winona Road Raleigh, NC 27609 Res.: 872-7329; Bus.: 543-6340
K4JZU	G	Phyllis Wainwright 2959 Wycliff Road Raleigh, NC 27612 Res.: 782-7564; Bus.: 733-5188			

Notes

NOTES

to the public. Free (non-commercial) messages are handled, passed, and delivered, for the public, every day, all over the U. S. and Canada, and most of Central and South America. These messages are the training material which we require, if we are to gain experience AND expertise.

Local "shopping center" message nights simulate local emergencies by providing heavy traffic loads from one area at a time. Christmas messages do an excellent job of simulating a National disaster, in that many messages are coming from and going to everywhere.

Correct procedures for both phone and CW traffic nets are spelled out in detail in several ARRL publications, and these should be examined. But the most used method of learning traffic net procedures is checking into the nets and listening to how it's being done. The latter method has two problems, it takes a long time to hear every type of situation arise and be handled, and you might emulate a procedure which was being done wrong, when you heard it.

Without going into great detail about how the NTS works, let me mention a few nets which are excellent for beginning traffic handlers.

Local nets:
RARS 2m - 146.04/.64, 8 PM.
Triangle Alert Net -
146.34/.94, 8:30 PM.
Piedmont Coastal Traffic Net -
146.28/.88, 9 PM.

Section nets:
Carolinas Novice Net -
3.715MHz, 6:15 PM.
Carolinas Net -
3.573MHz, 7 & 10 PM.
Tar Heel Emergency Net -
3.923Mhz, 7:30 PM.

Even if you don't plan to be heavily involved in traffic handling, I think every Amateur operator ought to be familiar with the procedures and discipline required on the traffic nets.

Hpe C U there soon.

73
Ed, AB4S

NORTH CAROLINA
HAS
PRETTIER
POSSUMS

PLAY IT AGAIN SAM
"THE RFI BLUES"
BY WA9NEW

One of the nicest things about this great hobby of ours is that there are so many different activities and interests that one can pursue. There's DX, contests, awards, certificates, public service, ragchewing, moon-bounce, satellites, RTTY, SSTV, ATV, and the list goes on and on. But in spite of all the variety and differences, there are two common factors. The first is that if you're an active Amateur, you're "On-The-Air". The second is that if you're On-The-Air sooner or later, for better or worse, 'til death do you part from this great hobby, you're GOING to be either the cause of, or the victim of, Radio Frequency Interference!

Oh, you doubt my word? Then try the following experiment. The next time you're swigging down a cup of java or an 807 in the midst of any number of active Amateurs, be the first to tell a TVI story. Then just sit back and listen. There's no greater start for a "Can You Top This" session. Everybody gets in on the act. There, now are you convinced that RFI, in all of its ghastly, horrible manifestations, is every bit as much the Great Common Denominator for hams as is the Grim Reaper for all of mankind?

Well read on my friend. There's a glimmer of light coming from the end of this dungeon-like tunnel.

Senator Goldwater, K7UGA, has introduced Senate Bill S-622. Among other things generally considered

favorable to the Amateur Service (like making ham licenses valid for ten years, authorizing the Commission to use volunteers to administer tests and operating authorizations, and permitting the Commission to waive fees for Amateurs), this bill would specifically empower the FCC to make "reasonable regulations" on "the use of protective components in consumer electronic equipment to reduce the susceptibility to interference from radio frequency energy".

There. Now doesn't that sound great! The answer to all our prayers, right? WRONG!

Introducing a bill and getting it passed are two different things. Similar legislation has been introduced in both houses of Congress in every congressional session since the late Representative Charles Teague started the chain in 1973! This current bill was introduced last year and has been "pigeonholed" in the Senate Communications Subcommittee since June. That's exactly the same fate that has happened to every previous attempt to require the manufacturers to put a little thought and care into the design of consumer electronics devices. Our elected representatives have a neat thing going for them. Whenever a bill comes along that the big companies (the source of a lot of nice fat campaign contributions) don't want passed, all that needs to be done is to refer it to a subcommittee "for study" and wait until the end of the congressional session. The bill dies a nice quite natural death, nobody has to vote against worthwhile consumer legislation, and we can

start the whole process over again.

Well its about time that the people that we send to Washington to represent us stopped hiding their heads in the sand and addressed this issue. The only way that we can force this turn of events is to make our feelings known. If every ham in the country sent a letter to each of his representatives, we'd probably get some action. But that's not likely to happen. But what if each club sent a letter? On behalf of all of

its members. Now that could be done!

How about it? Will you make a motion at your next club meeting to send a letter urging your representatives to support Senate Bill S-622 before its too late again?

Bruce A. Eggers
14 Judith Road
Chelmsford, MA
01824

C O N F E S S I O N

By David Biggers
KB4CY
(Soon to be ?)

OK, C.T., I can't stand it any longer. My guilty conscience prevails. Three years, three months ago, not long after obtaining my Novice License, I moved from Asheboro to Raleigh. I attended my first RARS meeting at the invitation of WA4JJW. As is often the case, JJW didn't show up and I was left on my own. As Asheboro didn't have the Ham population of Raleigh, it was my first meeting with an Amateur Radio Club. I enjoyed the program and was especially excited about the drawing for the door prize at the end of the meeting. I had won only one other prize of

this nature in my life. It was while I lived in Asheboro. Stanley County, as everyone who frequents the trip between Raleigh and Charlotte knows, is dry as a bone. As a door prize at a sales presentation a fifth of Jack Daniels Black Label was being given away. My mouth drooled as I used my extrasensory powers to lift the slip of paper with my name on it to the top of the box. To the admiration of my colleagues, I won the prize.

RARS was giving away a 100' of Coax that night which I needed almost as much as the bottle I had recently won. (Anyone who has had to live in Asheboro understands the need for the bottle). Not knowing that the first drawing was for the "opportunity" to write an article for the newsletter, I put my extra-sensory powers into operation again--too late!--Chuck announced that this drawing was for the newsletter article! I couldn't turn my powers off quick enough--my name was drawn!

Being a Civil Engineer who had struggled through English and Literature with a grade of "D-," I kept my mouth shut, sat up in my chair, turned around and as everyone else was doing, looked for this poor sap who was so fortunate. You see, no one knew me! I was safe.

I skipped the next couple of meetings so no one would remember and put two and two together; however, I have attended just about every meeting since then and have put my powers into operation during the right moment of the prize drawing to no avail. I hope that by writing this article I have accomplished two things: (1) taken the jinx off my powers and (2) taken away the guilt of being one of the "silent majority" when C.T. requests participation in the newsletter. I also hope the benefit of this confession comes during the prize drawings at the Hamfest.

FURTHER CONFESSIONS OF AN XYL
by Ann Bradley, WA4APK



BRADLEY

Being married to a ham is not easy. There are too many evenings that dinner gets cold while the nut is trying for one more

Make Conservation A Habit



On the CP&L system, coal supplies more than half of the fuel for generating electricity. When you "Make Conservation a Habit," you save electricity as well as one of our most valuable natural resources.

CP&L

Carolina Power & Light Company

The Hams At CP&L Welcome
You To Raleigh And The
RARS 8th Annual Hamfest

CP&L

Carolina Power & Light Company

K4SVS	WA4TLI	WA4JJW	AA4VK	WB4YBF
WB4CWW	WA4EDZ	WD4MRD	WD4GWQ	KA4FOJ
WA4QFA	W4EIF	W4DNN	WA4PDP	WB4MQY
AB4F	K4YRC	KA4FLS	N4AGJ	K4NYS
AB4T	WD4NAO	WA4VSL	WB4HFL	K4NOC
KB4CY	WB4JXL	WA4GYH	WA4KBM	K4OVV
WB4WIR	WA4MBP	W4MZS	K4IXW	WA4AAV
WB4TAK	N4BYQ	WB4VIM	WB4EQJ	

state. Too often the household chores take a back seat to meetings, club duties, etc. Everything comes to a halt at 8:00 because it's "net-time." "Can't spare the time for a movie. Need to practice code." On weekends it's off to a hamfest or antenna party or something apparently more important than any responsibilities here at home. A person must have a ton of patience, an understanding heart, and a sense of humor to live with a ham. Thank goodness my husband has an abundant supply of these qualities. Poor fellow, being married to a ham is not easy!

There was a time when the shoe was on the other foot. I'm not sure I was as tolerant then as he is now. My attitude was different. My priorities were different. He wanted me to enjoy ham radio as much as he did. He kept encouraging me to "get involved." I held a Novice license for whatever that was worth. After putting in a full day at the office, preparing a hot dinner, tidying up the kitchen, doing the laundry, and picking up the clutter, what time was left to "get involved?"

But "get involved", I did! Once I was so involved that the oven-baked chicken became what I referred to as "overdone." He described it as "brittle." Not long ago, he stepped out of the bathroom shivering and dripping

and politely asked if he could trouble me for a towel. "Ooops! I was too involved to do the laundry. I'll get one from the other bath." I remember the time it would have been unthinkable to use a brown striped towel in a blue bathroom. Oh well! He's very patient and indulgent. He doesn't mind that socks are no longer mated and stacked neatly in a drawer. It's really not too much trouble for him to pick a pair from the pile on his night table--except that he's a mite color-blind. I assure him that no one notices if he wears one black sock and one brown. But I do feel terribly guilty. I must make time to at least separate them into a black pile and a brown pile.

Yes sir, my attitudes have changed. I've learned that the world doesn't stop turning if the bed isn't made. I haven't been cited by the sanitation department because last night's dishes are still in the sink. I've decided that a well-balanced meal is boring; unfolded laundry on the couch is a lived-in home; and the three most beautiful words are "Let's eat out." My priorities have changed. Talking to a new state is more important than mopping the kitchen. A Christmas star on the tower is more fun than a wreath on the door. And I bet I'm the only woman who

asked for a TH6DXX for Mother's Day.

In the last couple of years, I have "gotten involved" with club activities, hamfests, antenna parties and the like. I have attended classes, and spent numerous hours practicing code and studying theory. Do you think I may have over-extended myself? I was pretty sure I had over-extended myself when I passed the 20 wpm code test before he did. I do believe that was a "no-no." Suddenly he quit pushing me so hard.

Even though I've had the capabilities, I haven't spent a great deal of time on the low bands until recently. Now I'm learning to enjoy the thrill of a rare DX or adding another contact toward WAS. Lately, I've learned a few things: (1) An XYL has a certain advantage. A female voice stands out in a pile-up. While the OM is screaming his call-sign at the top of his lungs for half hour stretches with no result, I can pop into the shack, smile sweetly, pick up the mike and say, "Alpha Papa Kilo" and get an instantaneous 5 x 9. At that moment, it's usually best for me to leave the shack as quickly as possible. Sometimes, he hates me! (2) To admit you have mike-fright, are green and need help gets immediate sympathy and some valuable assistance. I've had a great deal of help from friends here

and friends I've talked to in faraway places. I once had a ham in Louisiana send me to another frequency where he broke into a pile-up and had the Prince of Saudi Arabia give me a call personally. I knew that someday my prince would come. (3) Hams all over the world are just as friendly as those here in Raleigh. I was nervous about talking to people I don't know. I've tried to keep in mind a saying I once heard. "A stranger is just a friend you haven't met." I have received QSL cards that are as warm and encouraging as conversations with friends here at home. One ham from Indiana said "20M SSB is like a big fight, but no one gets hurt--hi. Just jump in and take a space." As I develop confidence, I'll learn to do that. (4) People can make time for things that are important to them. My job takes 8 hours of my day off the top. With what is left of the 24, I have to divvy-up the best I can. I've had to eliminate some things that I used to consider important, and I find that they weren't really important after all. What is important is being happy, enjoying what you're doing, taking pride in accomplishments that are gratifying and sharing your interests with people you like.

The OM can put up with a little dust and clutter. He doesn't mind. It's more conducive to

compatability to be willing to drop things and take part with him in whatever is happening. Have fun with ham radio--or whatever your interest. Don't feel guilty if your time and energy can't cover everything. "You only go around once--but if you do it right, once is enough."

DID YOU SAY IT'S CROWDED
ON BROADWAY?

by

Chuck--WB4VVL---Advisor,
Wake Tech ARC and Prexy,
Gary ARC* ** * * * *

Checked into the *CMN at 1305. At that time WØJEH came on with emergency TFC for Raleigh. He was trying to get a message to the governor. The text was: "Communications out in Dare County, except for Ham Radio. Mayor Perry--Kill Devil Hills--Request area be designated as a disaster area. Mann Harbor has no electrical power for 24 hours. Many elderly people." Bob, WØJEH, was in Maneo and asked me to call Joe Grimsley, in Raleigh, reference the disaster. I called information who gave me his number, 782-1004. Then I called Joe (at home) who said that he was on leave of absence and gave me another number to call, 733-5811. No luck.

I then called the governor's mansion at 733-3871 and talked with Trooper Bailey. I explained the situation and gave him the message along with my name and phone number. He told me the governor was not there and gave me another number to call; i.e., the governor's office at 733-2888. I called this number with no results.

The problem was that Raleigh was "snowed under" and all state offices closed.

At this time I called the Office of Civil Preparedness at 733-3867; no one answered. I reported to CMN and WØJEH my results so far. Then DUB, W4VTP, who was also looking up phone numbers for me, asked me if I called the state operator. I said no and he gave me the phone number, 733-1110. I left the net and called this number. No answer! (The net control Dot WD4CNQ stopped all TFC to clear Emergency TFC.) I then called Citizen Help at 733-2391--no luck! At this point, I called the governor's mansion again and talked with Trooper Bailey--no governor.

Time involved now--45 minutes. At this point I called the Highway Patrol office. I explained the situation and they gave me the governor's number to call (733-5811). I told them that I had already called this number and they put me on hold. After about 4 minutes they came back and gave me Mr. Spurlin's home phone number at 467-1478. Mr. Spurlin is from the

Office of Emergency Management. I gave him the message, the freq we were on and my name and phone number. He acknowledged and said he would look into it. I reported this to Bob WØJEH on CMN. Band conditions starting to get bad. DUB W4VTP took over as NCS because Dot, WD4CNQ, was having hearing difficulties.

At this time, Trooper Bailey from the governor's office called me and said that the information had been given to Buddy Mitchell, Sec. of Public Safety and Crime Control. I thanked him and relayed the info to "JEH."

The band was now in bad shape so we QSYed to 40 mtrs: 7231 and set up a net with myself, WØJEH, W4HKB, WD4PDZ and others. On 40 mtrs. WØJEH came on with priority TFC for Rocky Mount stating that the

phone service was out. This message was delivered via 2 mts to R.M. (3 repeaters used: 22/88 Ral, 147.72/12 Rocky Mount; 147.69/09 Greenville). Time 1410Z.

At this time "JEH" passed TFC to other stations and we continued the net.

Time 1515Z. "JEH" had R TFC (Health and Welfare) to Greenville. I took it to the Greenville Repeater and delivered. While on the repeater Jan WA4VDJ asked me to take TFC back to net to inquire about her father who was on the outer banks.

I took this back to 40 mt. net and gave to "JEH." Received reply at 1625Z and took back to Greenville. The net then closed about 1712Z.

"PASSELLS OF POSSUMS"

K4IA0-Jean-PT#28
K4SVS-Lloyd-PT#27, 0'P2C

Nets are used to catch butterflies. Nets are used to catch minnows. But, did you know nets are also used to catch possums? Maybe I should say O'possums, for reasons that you will see later on!!!!

The net we are referring to is the "Possum Trot Net" which meets on 2 meters at 31/91 and 34/94. Promptly at 6:30AM,

Monday-Friday, a male possum or a female woman lady possum breaks the quiteness of a sleepy household calling all possums together. Some are already on the trail, some are barely awake and some are so cheerful, it's unbearable! It seems the sun shines brighter that day for the ones that check in on the net.

For a little background; the net was formed quite by happen so. Several hams in the Fayetteville area would get on 2 meters early every morning while some were in route to Fort Bragg for Physical Training. So they kiddingly called themselves the P.T. Net. Someone wanted to know what P.T. stood for, the answer came over the air waves: "Possum Trot"! Thus it was on January 25, 1977, the "Possum Trot Net" was formed, with WA4LZD, fondly known as "Judge", as the No. 1 official possum.

Now in the Durham area, there were some hams that wanted more than anything else in the world, to be possums. However, they could not successfully bring up the 31/91 repeater. The idea was born to have a second P.T. Net on 34/94, meeting at the same time as 31/91. Between the 2 Nets, from 50-100 possums begin their day sharing possum knowledge and wisdom.

Listen carefully and we will tell you how to become an official possum! All is required is 5 consecutive check-ins. Then the great day arrives! This is a day that will be instilled in your memory forever. You are formally "induced". It is a solemn ceremony, very loyal to the south. In fact, the "inductee" is asked to face the south with his hand over his heart. All the possums take the color music sheet assigned for that particular day and they "sing" the first stanza of "Dixie" (actually there is about 10 seconds of silence over the air waves). It is a very humbling

occasion in one's life. Oh yes! If a ham is just innocently travelling thru, (particularly Yankees!), he had better watch out, because if WA4LZD happens to get ahold of him, he'll be a H/A Possum

Trotter before he knows what's happened! He is asked to stop his car, get out and face the South with his hand over his heart, while the members "sing Dixie" to him. Can't you imagine the looks this would bring from the other motorists??

As if all this ~~were~~^{else} not enough, our No. 1 Official Possum came up with another certificate (pronounced certifi 'cate).

The idea first came about when Judge obtained our mascot....a real live O'possum! After taking a trip to the taxidermist, he became permantly mounted on a wooden base. While he was there, a name was chosen for him, appropriately O'P. He was presented to about 50 other possums at a "sepper" meeting in Durham. He, of course, was the center of attention.

From this came the new O'P Certificate, requiring 150 logged contacts with other possums. As many of you are aware, this caused a furor on 2 meters. In this home with all four of us hams, it gets pretty hectic at times anyway. But with two trying for the O'P award at the same time, it was chaotic!! After about two weeks, with their mission accomplished, they returned to normal.

Just another statistic or two, and we'll wander on down the trail out of sight. The P.T. Net is represented in 32 states, 3 foreign countries, and in the Province of Canada. So you see, there's passells of possums scattered all over. We invite all of you to be early risers, check in on the P.T. Net and become fellow possums. We guarantee the sun will shine brighter for you too!!!!!!

LIGHTNING PROTECTION

WALT SHORT, N4SW

All my life I've been awed by the spectacle of an electrical storm. Never truly afraid and in fact, I somewhat enjoyed watching a nearby lightning display - but I'm changing my opinion. I now worry more about a lightning strike. I've been hit twice!!

In September 1977, lightning came into our home in Virginia via the electrical wiring. It vaporized the oven element, it destroyed a fan motor in the refrigerator and popped a few light bulbs. All this occurred while the ham gear was turned on and being operated. Not one piece of the ham gear was affected. The electrical service was via standard overhead wires running from pole to house.

In May 1979, lightning came into our home in Raleigh, again via the electrical wiring. This time it came in via underground wiring. At the house service entrance panel four #6 wires go straight down and underground to the garage and workshop. Apparently the path taken was from the main feeders, up into the house panel and then back down underground to the garage/workshop. In the garage a main panel divides the power into 4 branch circuits. Two circuits feed the workshop.

One side of the 220 service apparently carried all of the energy. Everything connected to the one side was destroyed, but only the equipments in the garage & shop. Equipments in the house were not affected.

Most electronic equipments were not turned on, and several had a second switch (workbench main switch also turned off);

however, everything plugged in was destroyed in various degrees. All from entry on the power cord.

The intercom system was turned on and it also had an underground cable back into the main house. The intercom in the workshop was completely burned out and the control switch in the house was charred beyond recognition.

Fortunately, no fires ensued and no one was hurt, however, I feel very lucky not to have been near one of those equipments when the strike occurred.

What really shatters me is that both of my experiences occurred not at the height of a bad storm but instead were lightning strikes which came before I would normally close down ham operation due to a threatening storm.

What to do! Twice lucky - now it's time to ask the experts. Lots of reading and discussions with KB4RW and K4CB have led to the following:

THE PROTECTION PLAN

#1. Tie all the grounds together!

The objective is one single ground in which all parts move up & down with any lightning energy. You included!

Ground all equipments together and run a ground to all plumbing nearby. Tie appliances to the plumbing and of course, connect the house electrical ground to the above.

If you're operating your station and the house plumbing goes under your chair, you don't want to be the path from your equipment to those well-grounded water pipes.

#2. Feedlines & loops.

Coaxial cables should be routed straight towards the ground and then a $\frac{1}{2}$ or $1\frac{1}{2}$ turn loop taken before entry into the building. Wrap a ground wire around the coax loop and extend it several feet up the coax. Connect this wire to your ground system. Also put a ground rod directly below the loop. The ground wire doesn't have to make direct connection to the co-ax conductors.

#3. Electrical supply.

At the house main panel install a lightning surge protector. I installed a G.E. Model 9L15DCB005. These are available for about \$10.00 and will protect motors, and non-electronic devices. Installation instructions come with the device.

A better, but not as readily available device is a Zeus protector. These claim to be fast enough to protect even electronic/semiconductor equipments. The unit I added to the panel in the garage cost \$17.95 (1979), it's a Zeus Model CP-20.

If you're not comfortable working inside your main service entrance panel you might consider the following switch box. It uses a "3-wire" house switch to ground all station equipments.

Outlet To All Station
Equipment

Household-Type
3-Wire Switch

Black

Green

Station Ground
Buss

To measure the effectiveness first measure the voltage available at the test site, then measure the voltage drop across a 75w light bulb which is connected to the ground rod under test. (SAFETY FIRST -- Don't touch the ground rod & don't try to use this on a branch having a ground fault detector.)

(As shown in the photograph, you can also add a "Surge Protector" and a Pilot Lamp)

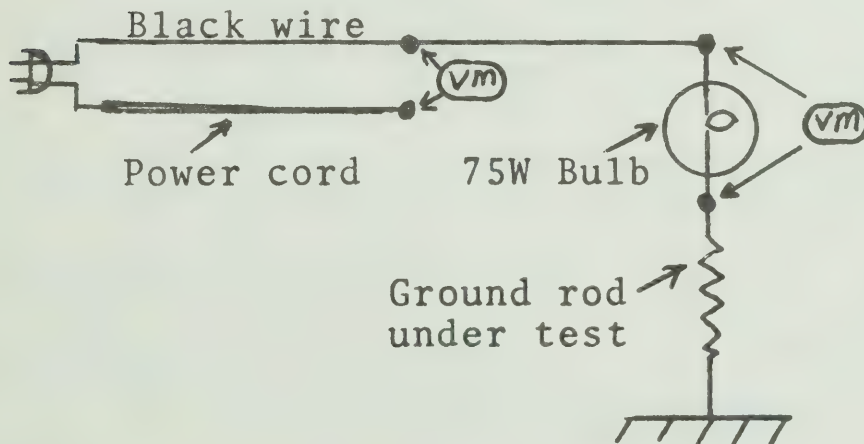
You must use a 75w bulb for the following table. Be sure to test the ground rod with everything else disconnected from it.



(K4CB also suggests tying white & green together inside this box for additional protection)

GROUND SYSTEM TESTING

K4CB has developed the following simple tester for measuring the effectiveness of a ground rod.



The table is based on the following formula:

$$R_g = \frac{R_b}{V_l - R_b}$$

Where: R_g = Resistance of ground rod to earth
 R_b = Lamp resistance (with V_b applied)
 V_b = Voltage across lamp
 V_l = Line voltage

It assumes the resistance of the power system is very much less than R_g .

Again, use a 75w lamp, otherwise you must plot the resistance of other lamps at each voltage.

ACKNOWLEDGEMENTS:

My thanks to Jack Williams KB4RW and to Frank Atkinson K4CB for their help & valuable information. I'd like to learn more from anyone having actual experience with lightning strikes & solicit additional articles on this subject by more expert authors.

.....

Note from Charles Casey, AA4BA:

"I have application forms for these traffic certificates:

"See me at the hamfest."

WAS
5BWAS
DXCC
5BDXCC

73
Charlie

SOURCES OF RARS

HAMFEST PRIZES

by

Chuck Littlewood, K4HF
Hamfest Prizes Chairman



LITTLEWOOD

We are grateful for prizes provided RARS for its 1980 Hamfest by these leading firms:

Vickers Electronics,
Durham, N. C.

GISMO, Rock Hill, S. C.

Heathkit, Inc., Benton
Harbor, Mich.

Georgetown Communications,
Asheville, N. C.

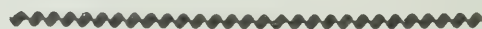
Amateur Associates, Raleigh,
N. C.

Hudson-Belk Department
Store, Raleigh, N. C.

ITT Telecommunications
Corporation, Raleigh, N. C.

ARRL, Newington, Conn.

I urge RARS members and all other hams to express their appreciation to these firms for their help. An excellent way to express appreciation is to do business with them.



QCWA MEMBERS MEET APRIL 20

Coastal Carolinas Chapter Number 118 of the Quarter Century Wireless Association will meet in Raleigh at noon Sunday, April 20.

The meeting will be held at the Crabtree Howard Johnson Hotel during the RARS Hamfest.

Interested amateurs are invited. Persons who have held a valid radio amateur license for 25 years are eligible for membership.

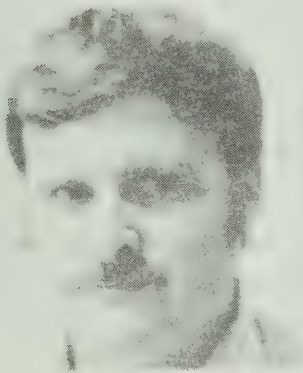
Chapter members will elect officers for the coming year during the lunch meeting. New officers will be installed in August.

Current president is Bob Knapp, W4OMW of Greenville.

80 METER DX'ING

by

Charles Casey, AA4BA



CASEY

In the conquest of that dreamed of 5BDXCC, one must spend a considerable amount of time on 80 meters (3.5 - 4.0 MHz) during winter nights. This may be an undesirable chore to some, but to others it may be an enjoyable and gratifying experience. There are lots of great hams who will sit around and ragchew, discuss antennas, amplifiers, and rigs while they anxiously await the nightly band opening. I thoroughly enjoyed getting the 100 countries confirmed on this band. The QSL return rate is the highest of any band I have worked, 128/110, not counting Russian countries I have worked.

The characteristics of 80 meters are much like that of 40 meters, which is a nighttime DX'ers band. Unlike 40

meters, which provides good nighttime DX'ing throughout the year, 80 meters is reliable for DX only during the winter months, November to April. The reason: During the daytime the D layer of the ionosphere becomes highly ionized and absorbs the low frequency signals. The D layer has no effect on higher frequencies, 14 MHz and higher. When darkness comes, the D layer disperses and the F-1 and F-2 layers combine to form a reflective surface for low frequency signals.

Magnetic and atmospheric conditions should be quiet for best reception. Spring thunderstorms can cause great QRN and ear-splitting static crashes.

During summer, the period of daylight is so long it takes too long for the D layer to discharge, although DX is still possible at night and especially at sunrise.

One must be familiar with the characteristics of propagation at this frequency to know when to work what part of the world. Regular F layer skip occurs at night with other parts of the world that are also in darkness. The way to work "long haul" DX is to listen for countries in which sunrise coincides with our sunset, or vice versa. A good example is

VQ9KK. I worked him twice and heard him five days in a row on 3.515 MHz with signal strength of 5-7-9 to 5-9-9 between 6:00 p.m. and 7:00 p.m. local time in January.

The best way to work 80 meter DXCC is to have an extra class ticket and a kilowatt, but it has been done by many with an advanced ticket and low power (200 watts). Transmit in the advanced portion of the band and listen elsewhere. This is especially effective during DX contests when DX stations are trying to work as many stations as possible. They will transmit on 3.795 MHz, for example, and announce where they are listening. The best place to listen on phone is 3.790 MHz to 3.810 MHz, and for CW 3.500 MHz to 3.530 MHz.

Antennas do not have to be anything special. The most common is an inverted V or dipole. Verticals work well but require many radials for optimum performance. Sloper antennas probably are one of the best. They are somewhat directional and vertically polarized. The only drawback with a sloper on this band is that it requires a very high support (90 - 120 feet). Some hams have sloper systems, which are two or more slopers from one support,

electrically or mechanically switched to favor a certain direction.

Summing it up, I could say that if you are a serious DX'er who wishes to try all aspects of DX'ing, if you are tired of the nerve shattering 20 meter band, 80 meters has something interesting and gratifying to offer. It is not easy, but when you work that 100th country, you will have an indescribable feeling of satisfaction.

See you on 80.

UPDATE: CENTRAL N.C.

WEATHER NET

by

Mike Bezera, WB4TQD

The Central North Carolina Weather Net is well into its second year of operation with more than 250 participants.

The net, which meets each Wednesday at 7:00 p.m. on the wide-coverage 28/88 repeater in Raleigh, has on the average 15 to 30 check-ins. During the year and a half of operation, the net has been activated

three times at the request of the National Weather Service at Raleigh-Durham Airport.

Effective April 1, 1980, Russ Lee, WA4VLE of Durham became net manager. Russ has been with the net since its inception and has been the major interface with the Weather Service. Russ has a TRS-80 computer at home with which he can keep the net roster updated as new stations check in. Other TRS-80 owners may wish to get a copy of the program from him for use with other nets.

The net was organized for the use of any and all amateurs in the coverage area of National Weather Service at RDU. Although Raleigh Amateur Radio Society and the Durham club played major roles in establishing the net, the net is for anyone who wishes to participate. It is for all amateurs in the area. It needs your support. Since we meet only once a week, the time required from any one person is only about 20 minutes. We are in need of stations to call the net. At present we have only four.

The net is good training ground for stations to learn the ins and outs of traffic control. If you are interested in helping, or you wish more information, give me a call on 28/88.

TRAFFIC NOTES

by

Bob Corns, K4MC

These are two meter nets holding daily traffic sessions.

All are P.M. nets

7:00	WR4ANN Fayetteville	146.91
8:00	WR4ACF Raleigh	146.64
8:30	WR4BEK Durham	146.94
9:00	K4ITL Raleigh	146.88
9:00	WR4AEU Charlotte	146.94
9:30	W4EXU Salisbury	146.73
9:30	WR4AOX Laurinburg	146.625



NCSU ARC

W4ATC NEWS AND VIEWS

by

Charles Osborne, WD4MBK

With the end of April, another year closes for students at North Carolina State University. Exams end May 6, a Tuesday, for almost everyone. The last half of that

week holds special plans for W4ATC members and a few guests. It's our fourth annual after-exams mountain campout. So far, about 10 persons plan to "hit the high country" for a few days.



OSBORNE

An initial group plans to set up on Whitetop Mountain in southwestern Virginia Wednesday, May 7. Equipment will be up and running by dusk on two meters and 70 centimeters. If all goes according to plans, we will call the East Coast 70 Cm. Net from atop the mountain and check into Wednesday night two meter nets in Maryland, Ohio, and Alabama. I've listened to mobiles going to work in New York City via '52 simplex from atop that mountain. The altitude makes for a whole new ball game in range on two meters. We get into 28/88 Raleigh with 10 watts and can work handy-talkies into Kentucky on '52.

With winter conditions we've worked nine states consistently on 432 mHz in our net. We can't wait to see what we get from White-top.

Mountaintopping is a new experience for most people. Over a mile high, you sunburn easily in 80 degree daytime highs. At night the temperature may plummet to 30 degrees. Believe it or not, we were snowed in atop the mountain May 13 two years ago. We've had it all: rain, wind, snow, 20 degree temperature, hail, and beautiful weather. During one thunderstorm we wanted to hide under a rock. A lightning storm at 5520 feet is no fun at all.

Planning these trips down to the last spare fuse (I hope) and wrench to put stations on six meters, two meters, 220 mHz (and 1296 mHz this summer, we hope) is my thing. I visualize each station in my mind and list all the parts on paper to use for checklists.

The May campout will tell us a lot about antennas and interference for our June VHF contest attempt. We will go back to Whitetop Mountain June 14 and 15 for the contest.

We desperately need help for the June contest. Truck campers or vans, some high power linears, and operators would help immensely. Six or eight people have a real workout setting up and taking down five complete portable stations. We'd love to have you. You don't have to be a member to help us win the June VHF contest. Give us a call at 737-3337.

~~~~~

### RARS ON THE RUN

On a very rainy Sunday afternoon at 1500 hours, over 4000 guys and dolls ran 10,000 metres down the main drag in Raleigh, Hillsboro Street headed for Valhalla in Dorton Arena. To some, it was a ghastly sight; to others it was more of an inspiration. Between these extremes stood, in the rain, clutching their working handy talkies, 5 stalwarts of the RARS gang,---WA4A00 with XYL Ann,WA4APK, W6SRF, WA4ENZ,WD4VIM, andW9 NTX. At the ranch (es) were WD4DTI, wearing the small size Official T-Shirt around his arm, W6MVZ and W4PRQ with base stations. N4AWR held forth at the EMT Van. All members performed in a professional amateur(?) manner. That apparent confused semantics is clear to us hams. So we give much thanks to this crew who did so well in providing amateur radio

support to a fad which, like it or not, has taken hold of the American public at large. Some changes need to be made in the use of our support at these things but the important thing right now is that RARS did its thing in a truly outstanding manner. Kudos to all. One man missing in all this,-- wasn't really, i.e. W4FMN. He, poor soaked soul RAN in the race. Make no jokes, he finished. And that counts for something, especially these days. And now, hams and runners, let's go to the next 10K!

HELP VIC\* \* \* \* \*  
That ole pro, Vic Clark W4KFC, a member of OUR club, has put out the word. He cannot do it by himself. Even Vic has limits. That is, Vic wants all info on where hams are going? What is the future of hamdom. We must look ahead, make plans, or at least dream of what we can be. Satellites whirring overhead, computers smoking, pics getting as good as commercial TC with SSTV/ATV, all radio equipment getting more and more goofproof, what lies beyond? How do we tie all these goodies together? What new twists can be devised for the DX hounds? How can traffic be routed more quickly and accurately? What new horizons can be exploited with CW? There are many, many unanswered questions like these.

\*\*\*\*\*Bert W4FMN,OES\*\*\*\*\*

RALEIGH AMATEUR RADIO SOCIETY, INC.  
POST OFFICE BOX 17124  
RALEIGH, NORTH CAROLINA 27609



# RARS

**RARS meets each first Wednesday at 7:30 p.m. in the  
West Community Room of Crabtree Valley Mall.**

**RARS TWO METER FM NET — Meets 8:00 p.m. every night**

**146.04/146.64 Repeater**

**RARS 10 METER SSB NET — Monday, Tuesday, Thursday, Friday Nights  
7:00 p.m. — 28.540 MHz**

----- MORE CONVENTION INFORMATION -----

The 1970 ARRL ROANOKE DIVISION CONVENTION will be held in Raleigh, North Carolina Saturday, October 31 and Sunday, November 1. The Raleigh Amateur Radio Society has gone all-out to sponsor one of the Division's finest conventions ever.

Planned activities include an ARRL forum with headquarters and field league officials, technical sessions, QCWA meeting, DX forum, MARS-CD-RACES sessions, a flea market, code contest, home-brew contest, QSL card contest, antennas seminar, manufacturers' presentations, FM and Repeater sessions, numerous other get-togethers, and don't forget the Wouff Hong ceremony at midnight Saturday.

Several manufacturers will have their latest radio gear and related equipment on display during the day Saturday.

The RARS will conduct a "talk-in" on Friday night and Saturday morning for those of you who are mobiling into the Raleigh area and want directions to the Convention headquarters, the Hilton Inn. Stations will be on 80 meter SSB at 3920 kHz, 6 meter SSB at 50.14 MHz, and 2 meter FM at 146.94 MHz.

A flea market will be held on Saturday beginning at 10:00 a.m. There will be an opportunity to browse and swap or sell all kinds of gear-old and new. All flea market parking available will be assigned on a first come, first served basis. Write "Flea Market", W4EEL, P. O. Box 12541, Raleigh, N.C. 27605.

A highlight of the convention will be the gala banquet held Saturday night, October 31. Good food and a prominent speaker will be featured. There will be plenty of opportunity for personal get-togethers and "eyeball QSO's" with all those fellow hams you've worked so many times but have never met. Climaxing the evening will be the Wouff Hong Ceremony at midnight.

A hospitality suite will be open at the inn on Friday night for early arrivals and will continue in operation Saturday and Sunday.

GIRLS, WE HAVEN'T FORGOTTEN ABOUT YOU. Our YL's and XYL's have planned a program that will be a highlight of the convention for you. Beginning Saturday morning, you will have a busy day with a presentation on cosmetics given by Merle Norman Cosmetics, a luncheon full of surprises, and a great big shopping spree at Raleigh's North Hills Shopping Center, one of the Southeast's finest fully enclosed, all-weather malls with over 85 stores of every kind and quality to serve you. In addition, the gals have reserved a hospitality suite at the Inn solely for your use so that you can prop up your feet, stretch out, and loosen that tight girdle while enjoying a cup of coffee, relaxing, and comparing the "advantages" of being a ham widow.

Due to limited facilities, we are forced to limit the number of banquet tickets. We have already had a tremendous response to this convention and reservations are going fast on a first come, first served basis. So get your request in to John Fried, W4WWD, 3606 Winton Road, Raleigh, N. C. 27604 EARLY!!!

WE'RE LOOKING FOR YOU AT THE 1970 ARRL ROANOKE DIVISION CONVENTION!





# THE 1970 ARRL Roanoke Division CONVENTION

**October 31 - November 1, 1970  
Raleigh, N. C.**

SPONSORED BY THE RALEIGH AMATEUR RADIO SOCIETY

The Raleigh Amateur Radio Society is planning a "REAL-L-L-YB I G SHOW" for the 1970 ARRL Roanoke Division Convention this year. Come to Raleigh, N. C. and get in on all the fun and attend your choice of seminars, technical discussions, and forums, as well as a highlight of the Convention - the Banquet to be held Saturday night featuring a prominent speaker.

- ★
- ★
- ★
- ★
- ★
- LOTS OF PRIZES ● ARRL FORUM WITH JOHN HUNTOON, LEW McCOY, AND VIC CLARK ● MANUFACTURERS PRESENTATIONS ● FLEA MARKET
- MARS, CD, and RACES SESSIONS ● WOUFF HONG CEREMONY
- GETTING STARTED IN HAM RADIO ● AMATEUR SPACE COMMUNICATIONS
- CW (including Left Foot), QSL, and HOMEBREW CONTESTS ● EXHIBITS
- DX FORUM ● QCWA MEETING ● FM and REPEATERS ● ANTENNAS
- YL - XYL PROGRAM complete with demonstrations, luncheon, and Shopping Spree in Raleigh's North Hills Shopping Center



ADVANCE CONVENTION REGISTRATION ---\$2.75

ADVANCE COMBINATION: ONE (1) EACH REGISTRATION AND  
BANQUET RESERVATION --- \$10.50

ADVANCE BANQUET RESERVATIONS FOR MEMBERS OF IMMEDIATE  
FAMILY --- \$8.00

ADVANCE YL - XYL PROGRAM REGISTRATION ---\$3.50

Don't get left out and miss the great 1970 ARRL Roanoke Division Convention. Mail in the bottom portion now and enclose a check or money order payable to "RARS 1970 CONVENTION" to make sure you have a place. Be sure to bring the YL-XYL; she will never forgive you if you don't.

Convention headquarters is the Hilton Inn in Raleigh. The Inn has set aside a block of rooms for those of you who wish to stay overnight. **PLEASE MAKE YOUR RESERVATIONS DIRECT WITH THE INN.** Be sure to get your reservations in early as these rooms will go fast. Rates: 1 person - \$12.50; 2 persons - \$16.00. Address: The Hilton Inn, Amateur Radio Convention, 1707 Hillsborough Street, Raleigh, N. C. 27605; telephone 919-828-0811.

All Prices Will Be Higher  
At The Door.

Advance registrations must  
be postmarked no later than  
October 20, 1970.

# FIRST ANNUAL HAMFEST

Sponsored By  
RALEIGH AMATEUR RADIO SOCIETY  
at  
N. C. State Fairgrounds, Raleigh, N. C.

**SUNDAY  
APRIL  
15  
1973**

## LOOK!

- FLEA MARKET ●
- MARS MEETING ●
- PRIZES ●
- WOMENS ACTIVITIES ●
- NET & ASSOCIATION MEETINGS ●
- MEAL — BUFFET (No Barbeque) ●
- FREE PEPSI & COFFEE ALL DAY ●

REMEMBER THE 1970 ARRL ROANOKE DIVISION CONVENTION AND THE 1971 ARRL NORTH CAROLINA STATE CONVENTION? WELL, THE RALEIGH AMATEUR RADIO SOCIETY IS DOING IT AGAIN. THIS YEAR THE RARS IS SPONSORING THE FIRST ANNUAL HAMFEST AT THE NORTH CAROLINA STATE FAIRGROUNDS IN RALEIGH. EVERYTHING, INCLUDING THE FLEA MARKET, WILL BE INDOORS SO COME RAIN OR SHINE THE HAMFEST WILL GO ON. THERE IS EVEN PAVED PARKING!

COME ON TO RALEIGH APRIL 15 AND SEE! GET IN ON ALL THE FUN, ACTIVITIES, EYE-BALL QSO'S AND LOTS MORE!

### -- FLEA MARKET --

THE FLEA MARKET WILL BE HELD INDOORS SO THERE WILL BE NO PROBLEM WITH RAIN OR COLD WEATHER. FLEA MARKET DEALERS MAY DRIVE THEIR VEHICLES DIRECTLY INTO THE BUILDING WHERE THEY WILL DISPLAY THEIR JUNQUE OR SELECTED MERCHANDISE. ANY DEALER CAN RESERVE SPACE BY WRITING RARS.

### -- MEETINGS --

THERE WILL BE MEETINGS GALORE AT THE HAMFEST. WE EXPECT MARS, THE DX SOCIETY, FM, NETS, AND OTHER GROUPS TO HOLD MEETINGS DURING THE HAMFEST. SPACE FOR MEETINGS CAN BE RESERVED BY WRITING RARS.

### -- WOMENS ACTIVITIES --

ONCE AGAIN, GIRLS, WE HAVEN'T FORGOTTEN ABOUT YOU. OUR YL'S AND XYL'S HAVE PLANNED A PROGRAM THAT WILL BE YOUR HIGHLIGHT OF ANY HAMFEST.

RARS WILL CONDUCT A TALK-IN ON SATURDAY NIGHT (For Those Of You Who Arrive Early) AND ON SUNDAY MORNING FOR THOSE WHO ARE MOBILING INTO THE RALEIGH AREA AND NEED DIRECTIONS. STATIONS WILL BE ON 80-METER SSB ON 3923 kHz AND ON 2-METER FM ON 146.94 SIMPLEX, 146.28/146.88, and 146.04/146.64.

OVERNIGHT TRAILER AND CAMPER PARKING WILL BE AVAILABLE AT THE FAIRGROUNDS FOR \$2.00.

---

FOR ADDITIONAL INFORMATION, DETAILS, OR RESERVATIONS FOR SPACE FOR MEETINGS OR THE FLEA MARKET WRITE:

RARS HAMFEST, POST OFFICE BOX 17124, RALEIGH, NORTH CAROLINA 27609



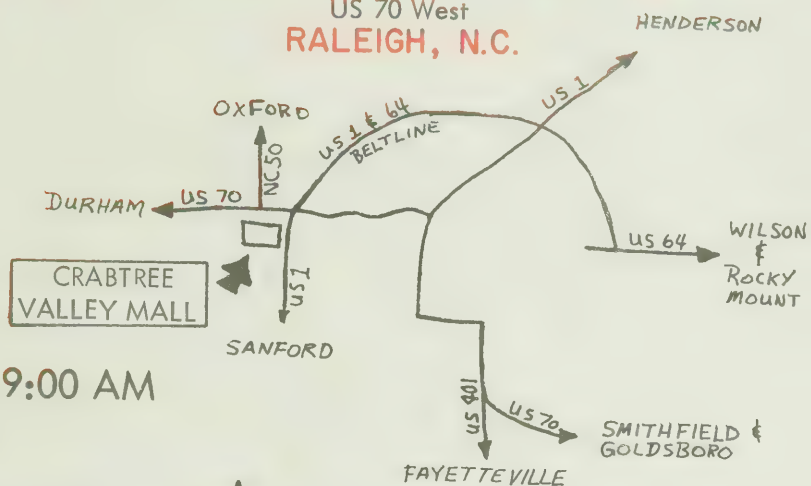


# THE RALEIGH AMATEUR RADIO SOCIETY'S SECOND ANNUAL **HAMFEST**

**SUNDAY  
APRIL  
21  
1974**

CRABTREE VALLEY MALL

US 70 West  
RALEIGH, N.C.



ACTIVITIES WILL BEGIN AT 9:00 AM

★ GREAT PRIZES ★

★ FLEA MARKET (COVERED) ★

★ WOMEN'S ACTIVITIES & PRIZES ★ NET & ASSOCIATION MEETINGS

★ ARMY, NAVY, & AIR FORCE MARS MEETINGS ★

TALK-IN ON SATURDAY AFTERNOON AND SUNDAY ON 75 METERS SSB ON 3920 kHz  
AND 2 METERS ON 146.04/146.64 AND 146.28/146.88

HOSPITALITY ROOM AT HOLIDAY INN NORTH, HIGHWAY US 1 NORTH  
(GASOLINE ALLEY) ON SATURDAY NIGHT 7:30-11:00 PM

PRICE \$2.50 PER PERSON (INCLUDES DRAWINGS);  
\$1.25 FOR STUDENTS (DOES NOT INCLUDE DRAWING)  
CHILDREN UNDER 10 FREE

GOOD FOOD CLOSE BY!!!

FOR ADDITIONAL INFORMATION, DETAILS, OR RESERVATIONS CONTACT:

Lee Johnson, WA4ZNA, 3312 Ashby Place, Raleigh, N. C. 27604

(Detach and Return)

To: Mr. Lee Johnson, WA4ZNA, 3312 Ashby Place, Raleigh, North Carolina 27604

Enclosed find my Check/money order for the following:

\_\_\_\_\_ Full Hamfest Registration at \$2.50 . . . . . \$ \_\_\_\_\_  
\_\_\_\_\_ Student Hamfest Registration at \$1.25 . . . . . \$ \_\_\_\_\_

Please reserve \_\_\_\_\_ rooms for my party of \_\_\_\_\_. (Reservations made through RARS or directly with the Holiday Inn North (not through Holidex) will qualify for discount. Rooms held until 6 PM unless guaranteed.)

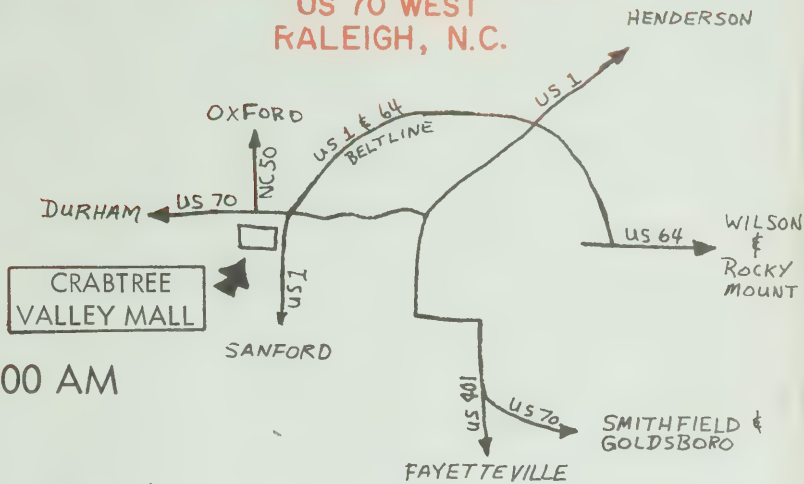
Name \_\_\_\_\_ Call \_\_\_\_\_  
Address \_\_\_\_\_ City & state \_\_\_\_\_  
Telephone Number \_\_\_\_\_ Zip \_\_\_\_\_



# THE RALEIGH AMATEUR RADIO SOCIETY'S THIRD ANNUAL **HAMFEST**

**SUNDAY  
APRIL  
20  
1975**

CRABTREE VALLEY MALL  
US 70 WEST  
RALEIGH, N.C.



ACTIVITIES WILL BEGIN AT 9:00 AM

★ GREAT PRIZES

★ FLEA MARKET (COVERED)

WOMEN'S ACTIVITIES & PRIZES ★ NET & ASSOCIATION MEETINGS

ARMY, NAVY, & AIR FORCE MARS MEETINGS ★ TECHNICAL PROGRAM

GOOD FOOD CLOSE BY !!!

TALK-IN ON SATURDAY AFTERNOON AND SUNDAY ON 2 METERS ON 146.04/146.64,  
146.22/146.82, and 146.28/146.88

PRICE \$2.50 PER PERSON (INCLUDES DRAWINGS)  
\$1.25 FOR STUDENTS ( DOES NOT INCLUDE DRAWING)  
CHILDREN UNDER 10 FREE

FOR ADDITIONAL INFORMATION, DETAILS, OR RESERVATIONS CONTACT:

George Richards, WA4EKJ, (Chairman), P. O. Box 17124, Raleigh, N.C. 27609

STAY AT HOWARD JOHNSON'S MOTEL, ROUTE 70W AND THE BELTLINE (200 YARDS FROM THE HAMFEST). RATES: Single, kingsize bed for 1 - \$16.00; for 2 - \$18.00. Double, queen-size bed for 1 - \$16.00; for 2 - \$21.00. RESERVATIONS AVAILABLE THROUGH YOUR LOCAL HOWARD JOHNSON'S OR DIRECT AT (919) 782-7525. TELL THEM YOU'LL BE THERE FOR THE RARS HAMFEST, THEN JOIN US SATURDAY NIGHT IN THE HOSPITALITY ROOM.

OPEN SATURDAY, APRIL 19 FROM 6 PM TO 12 MIDNIGHT AT HOWARD JOHNSON'S  
(US 70 West and the Beltline)

\*\*\*\*\*

FLEA MARKET SPACE RESERVATION (Detach and return)

TO: Lynn Pendleton, K4NYV, (Fleamarket Chairman), P.O. Box 17124, Raleigh, N.C. 27609

Please reserve \_\_\_\_\_ parking space(s) for my Flea Market Booth, until 10:00 AM Sunday, April 20, 1975. I understand that Flea Market locations are assigned on a first come, first served basis.

Name \_\_\_\_\_ Call \_\_\_\_\_

Address \_\_\_\_\_ Tel. No. \_\_\_\_\_

City & State \_\_\_\_\_ Zip Code \_\_\_\_\_





THE RALEIGH AMATEUR RADIO SOCIETY'S

4<sup>th</sup> ANNUAL

# HAMFEST

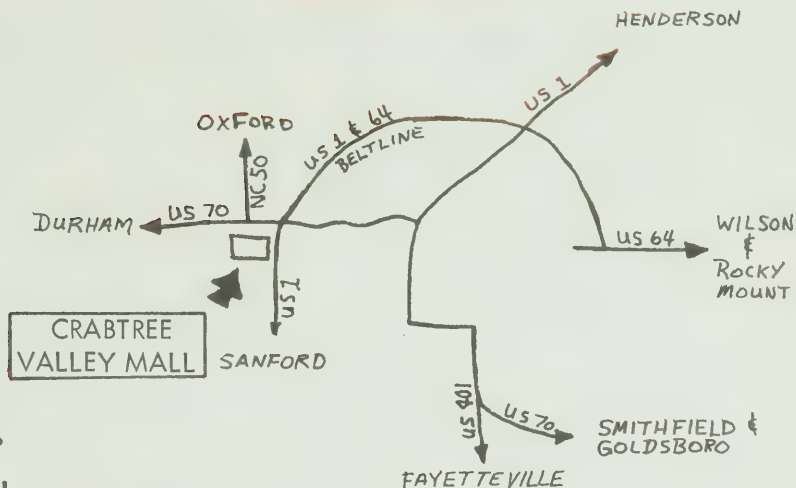
SUNDAY

APRIL

11

1976

CRABTREE VALLEY MALL  
US 70 WEST  
RALEIGH, N.C.



ACTIVITIES BEGIN AT 9:00 A.M.



## FOUR MAJOR PRIZES !!

- (1) Choice of FT-101E OR IC-22A and DV-21 Combo. Vickers Electronics aided RARS in the purchase of this prize.
- (2) Model 1402 SM 2.5W 2 Meter Handheld Transceiver with 6 sets of crystals. This prize presented courtesy of RARS.
- (3) Tri-Band Beam. This prize presented by RARS through assistance of Freck Radio.
- (4) Ham-M II Rotator presented by Cornell-Dubilier through Millar Electronics.

MANY, MANY OTHER PRIZES

EXPANDED FLEA MARKET (Covered) ★ LADIES PROGRAM AND PRIZES

★ WALK TO NEARBY MOTELS AND RESTAURANTS ★ MEETINGS

STAY AT THE RAMADA INN, CRABTREE, ROUTE 70W AND THE BELTLINE. RESERVATIONS TELEPHONE 919/782-7525. TELL THEM YOU'LL BE THERE FOR THE RARS HAMFEST. PLAN TO JOIN US FROM 6 PM TILL MIDNIGHT ON SATURDAY, APRIL 10, AT OUR HOSPITALITY ROOM AT THE RAMADA INN CRABTREE.

TALK-IN SATURDAY AFTERNOON AND SUNDAY

WR4ACF (146.04/146.64)

WR4AOE (146.28/146.88)

FOR ADDITIONAL INFORMATION, DETAILS, OR RESERVATIONS CONTACT:

Jack Kenny, WB4MCU (Chairman), P. O. Box 17124, Raleigh, NC 27609

\*\*\*\*\*  
FLEA MARKET SPACE RESERVATION (DETACH AND RETURN)

TO: Bob Corns, K4MC (Fleamarket Chairman), P.O. Box 17124, Raleigh, NC 27609

Please reserve \_\_\_\_\_ parking space(s) for my Flea Market Booth until 10:00 AM Sunday, April 11, 1976. I understand that Flea Market locations are assigned on a first come, first served basis.

Name \_\_\_\_\_ Call \_\_\_\_\_  
Address \_\_\_\_\_ Tel. No. \_\_\_\_\_  
City & State \_\_\_\_\_ Zip Code \_\_\_\_\_







THE RALEIGH AMATEUR RADIO SOCIETY'S  
18TH ANNUAL  
ARRL NORTH CAROLINA STATE CONVENTION  
**HAMFEST**

Jim Graham Building  
N.C. State Fairgrounds  
Raleigh, NC

110,000 Sq.Ft. -- All Indoors  
Hours: 8:00 A.M. - 4:00 P.M.  
Main Drawing: 3:00 P.M.

**April 8, 1990**

**\$4.00 PRE-REGISTRATION**

**\$5.00 AT THE DOOR**



**Amateur Radio Exams**

By Pre-registration until April 2. Send completed FORM 610, photocopy of your current license, code-theory certificates (CSCes), if applicable; indicate the highest class of license you desire to be tested for, and a check or money order for \$4.95, payable to "RARS -- VE" to:

Vince Yakamavich, AA4MY  
220 Carriage Trail  
Raleigh, NC 27614  
Telephone: (919) 847-8512  
(Exam information only, please)



**NEW THIS YEAR:** The exams will be held in the Holshouser Building, a single story, round building, a short walk North of the HAMFEST building, starting PROMPTLY at 11:00 A.M. Please bring your Original Current License and a form of photo ID such as student ID or a Driver's License, etc.



**Special Interest Meetings**

ARRL Forum -- Special Guests

Rick Palm, K1CE, ARRL HQS Manager, Field Services Division

John Kanode, N4MM, Director, ARRL Roanoke Division

Jimmie Walker, WD4HLZ, Vice Director, Roanoke Division

Reid Whitten, AB4W, Section Manager, North Carolina Other Roanoke Division Field Staff

Q.C.W.A. NAVY MARS, NTS, ARES, and other Meetings. Times will be announced at the HAMFEST.



**Homebrew Contest In The Building**

Prizes



**CW Contest In The Building**

Prizes



**A FULL LINE FOOD SERVICE Will Be Available In The Building During HAMFEST**



**Prizes**

1st Choice: ICOM IC 751A HF Transceiver with matching power supply

OR

ICOM IC 275H VHF Multi - Mode 2M 100 Wt Transceiver with matching power supply.

2nd Prize: ICOM IC 2400A 144/440 Mhz 35 watt FM Transceiver

3rd Prize: ICOM IC 32T 144/440 Mhz 2 Meter Handheld

SEVERAL other quality prizes will be awarded during the day for which you will have to be present to win.



**Fleamarket**

Regular Fleamarket space: 1 8-foot table, 2 chairs, \$8.00; 5 or more tables, \$7.00 each. With 110vac, \$10.00 per vendor. Please pre-register for booths, tables and 110vac power by April 2, 1990. Dealer/Vendor Set-Up on Saturday, 12:00 Noon-10:00 P.M. and Sunday, 6:00-7:50 a.m. Armed Security in building at all times.

ALL VEHICLES must vacate the building by 7:50 A.M. Please bring your own handcart.



**HAMFEST Social Saturday Night**

A free welcoming party will be held from 7:00-9:15 P.M. in the Holshouser Building, Saturday night, April 7, with food, drinks and prizes for those present.

In conjunction with the NCS ARRL Convention a WOUFF HONG CEREMONY will take place in the HAMFEST Building Meeting Room #1, at 9:30 P.M. after the Welcoming Party Saturday night.



**Talk-In Saturday and Sunday**

146.04/64 and 147.75/.15

**VENDOR INFORMATION:**

Rollin Ransom, NF4P  
(919) 269-4406

**GENERAL INFORMATION:**

RARS HAMFEST  
P.O. Box 17124  
Raleigh, NC 27619

----- CUT ALONG DOTTED LINE -----

**PRE-REGISTRATION FORM**

**PRE-REGISTRATION CUT OFF  
APRIL 2, 1990**

TO: Rollin Ransom  
Route 5, Box 267  
Zebulon, NC 27597

Please print clearly. Your S.A.S.E. will be appreciated.

Name \_\_\_\_\_ Call \_\_\_\_\_

Address \_\_\_\_\_

City/State \_\_\_\_\_ Zip \_\_\_\_\_

**PRE-Registration Prize**

AEA PK 232MBX Multi-Mode Controller Pre-registration Drawing at 10:00 A.M., Sunday, April 8. You DO NOT need to be present to win.

\_\_\_\_\_ Registration @ \$4.00 \$ \_\_\_\_\_

\_\_\_\_\_ Tables 1-4 @ \$8.00 \$ \_\_\_\_\_  
with two chairs

\_\_\_\_\_ Tables 5+ @ \$7.00 \$ \_\_\_\_\_

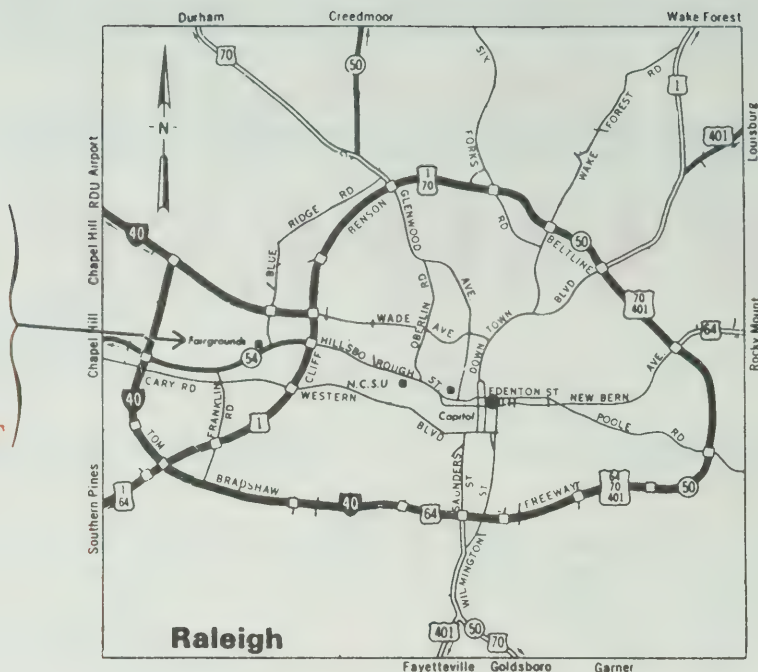
\_\_\_\_\_ 110 VAC @ \$10.00 \$ \_\_\_\_\_

Total Enclosed \$ \_\_\_\_\_

Make check payable to Raleigh A.R.S.

☐ YES, Saturday Camper/RV Overnight Parking

Jim Graham Bldg.  
N.C. State  
Fairgrounds  
The Site Of The  
**1990**  
**RARS HAMFEST**



To Save Money  
be sure to

**Pre-register**

Cut Off Date  
April 2, 1990



The Raleigh Amateur Radio Society welcomes you to its Eighteenth Annual HAMFEST. We will be sharing the NCS Fairgrounds with other events that will be going on at the same time so please follow the traffic and parking instructions while on the grounds.

If you desire either full hookup or overnight camper/RV parking, please check the box on the Pre-registration Form. A \$10.00 per night fee will be collected on site by the Fairgrounds Authorities.

#### VENDOR INFORMATION

If you want reasonably priced booth(s), multiple tables, 110vac power or have other questions, etc., please write or call Rollin Ransom, NF4P, at the address or number on the flyer.

No Food, Drink or Weapons may be sold or donated by attendees in the HAMFEST building at any time by NCS Fairgrounds Regulations.

Full-service food concession inside the HAMFEST building.

Drive-in and unload at your tables 12:00 Noon to 10:00 P.M., Saturday, and Sunday, 6:00-7:50 A.M. Please bring your own cart.

Don't forget the Saturday Night Hospitality Party in the nearby Holshouser Building, 7:00-9:00 P.M.

Several motels and restaurants are located on Route 70 West, West of the Raleigh Beltline. Comments about HAMFEST are welcomed by RARS. Members will be wearing yellow and blue armbands in case you need assistance.



**RALEIGH AMATEUR RADIO SOCIETY**

**N.C. STATE ARRL CONVENTION**

**JIM GRAHAM BUILDING, NC STATE  
FAIRGROUNDS**

**"110,000 SQ.FT. -- ALL INDOORS**

**1990 HAMFEST**

**SUNDAY, APRIL 8, 1990**



**AMERICAN RADIO RELAY LEAGUE, INC.**

**W. REED WHITTEN, AB4W**

SECTION MANAGER, ROANOKE DIVISION

1208 Oxford Place

Cary, NC 27511

Non-Profit Organization  
U. S. POSTAGE PAID  
Greensboro, N.C.  
Permit No. 370



# The TEARA

# Feedline

TRIANGLE EAST AMATEUR RADIO ASSOCIATION



Volume 5  
Issue 61

Promoting Worldwide Friendship via Amateur Radio

December  
1993

## Ham Radio... a Lady's Thoughts

A lot of men from all over ask if there is a way to get their wife or girlfriend interested in Amateur Radio. If you really want her to become a HAM then you must forget FORCING her to do it.

You won't win her that way. Here are some things that might work. I know because I once was a women who felt that the radio was my rival for my beloved's affections. That was before he encouraged me to study and become a ham.

You might have to promise her a cute little radio that will fit her hand or purse, get her a callbook with its endless marvels (be sure to get her one that has her call in it). Or maybe, even a callsign plate for her car.

Ask her to go to the hamfests and make sure you spend time with her there! Offer to teach her or, arrange with another ham, to get her help. Especially if she says that you're driving her crazy! Make it as attractive as you can.

Compliment her on her technical achievement in successfully learning radio and electrical theory.

Us women hams don't want to be thought of as "*lucky-one-test-wonders*."

I may not be able to build a radio from scratch but, I can be useful and productive in technical and non-technical ways. And don't choke... make room for her in the ham shack ( yes, I can just hear all those jaws hit the floor). Don't get her to get her license and then leave her out. Let people know that you are proud of her studies to become a ham and getting that first license.

Ham radio certainly has the marriage of this HAMETTE and her Radio Romeo! It is becoming more a hobby of fun with each other, and a service to others. We are enjoying the friendship of the *best people in the world*... other hams!!!

*Well, as most of you know, there is also an influence of that special someone in my life. Two of them as a matter of fact! Both are studying to become hams. Let's make 1994 the year that TEARA supports the women in the association, including those who let us enjoy our hobby- Edtr Many thanks to Cindy Rogers - KD4EVS; SERA*



The Triangle East Amateur Radio Association (TEARA) was formed January 1989, in Smithfield, North Carolina and has become the association of choice for Amateurs throughout North Carolina. The goals of the association are to promote international friendship through Amateur Radio and to serve the public by providing radio communications in the event of disaster, emergency or civic need. In addition, TEARA provides Amateur Radio license education to those new to Amateur Radio, as well as, those wishing to upgraded.

All persons who are interested in Amateur Radio, whether licensed or not, may apply for membership to the association. Membership dues are \$20.00 per year . Dues for each additional family member are \$10.00 per year. A membership year is from January through December.

Membership applications may be obtained from any of the association officers named below; the newsletter editor, at any TEARA meeting or TEARA special event/hamfest. Association meetings are held the third Tuesday of every month beginning at 7:30pm in the banquet room of =P= Spencer's, Zebulon, NC.

In addition to the many social and special events, the association also utilizes repeaters on 2m with frequencies of 147.390+ (WB4IUY) located in Clayton, NC, 147.300+ (WA4UQC) located in Wilson, NC. TEARA repeaters all support autopatch and are available to all licensed members.

#### 1993 Officers

President: Dave Hockaday - WB4IUY  
7804 River Dare Ave.  
Youngsville, NC 28596

V. President: Glenn Speight - KD4BSP  
5563 Central Road  
Wilson, NC 27893

Secretary: Gladys Tallant - KD4PMA  
Rt.-1, Box 190-02  
Pinetops, NC 27864

Treasurer: William Sellers - KC4SDK  
Mailing list: 410 South 5th Street  
Smithfield, NC 27577

Members of TEARA, as well as, the general public also enjoy the support of a telecommunication BBS, The CQ Connection. The CQ Connection is available 24 hours a day, 7 days a week and has available a large selection of DOS and Ham related files. The message areas are available to all users and downloading is allowed on the first call. Located in Zebulon, NC, The CQ Connection can be reached at (919) 269-2254 and is FREE to all callers.

The "Feedline" is published monthly by the Triangle East Amateur Radio Association, and is mailed to all current members at no cost.

Letters to the editor, technical articles, articles of interest to amateur operators and guest editorials are actively pursued. All submittals become the property of The "Feedline" and will not be returned.

Any article published in The "Feedline" does not necessarily reflect the views of the Officers, Board of Directors, Editor or association members with regard to the contents of the article. Articles will be printed at the discretion of the editor and no article will be published unless it is submitted with the full name(s) and call sign(s) of the person(s) submitting the article.

All items for publication must be submitted directly following the Board of Directors meeting or, no later than the first Tuesday of each month. Submitted articles may be hand written, type written, an ASCII (DOS Text) file on computer disk or transmitted electronically via telephone modem or on the amateur bands using PACKET.

Ham related items for sale by members will be advertised free of charge for one issue but, may be re-submitted as often as desired. Member ads must be non-commercial in nature.

Commercial ads will be run in return for the following donations to the association:

| Ad Size       | Single Issue | Full Year  |
|---------------|--------------|------------|
| Business Card | \$5.00       | \$50.00    |
| 1/4 Page      | \$10.00      | \$100.00   |
| 1/3 Page      | \$15.00      | \$120.00   |
| 1/2 Page      | \$22.00      | \$200.00   |
| Full Page     | \$44.00      | By Request |

Commercial ads must be edited and copy-ready and cannot be sent via the amateur bands. Color copy will not be accepted. All commercial ads are subject to prior approval.

A commercial ad published in The "Feedline" does not constitute marketing promotion by the association or its members. TEARA, the Board of Directors, Officers, the Editor or association members will not be held liable for type errors and does not guarantee that any item(s) advertised to be suitable or intended for its advertised purpose. Claims should be submitted to the advertiser promoting the product(s).

1993 "Feedline" Editor: Joe Motola - N8RQR  
P.O. Box 1121  
Zebulon, NC 27597  
(919) 269-4438 FAX/Home  
(919) 269-2254 Data

# Minutes of the General Meeting.... 11/16/93

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Galdys Tallant - KD4PMA

The regular meeting of the Triangle East Amateur Radio Association was held at =P= Spencer's on Tuesday November 16, 1993. The meeting was opened at 7:30pm by Dave Hockaday - WB4IUY, President.

All members who were present at the meeting introduced themselves and visitors were welcomed.

Dave - WB4IUY gave a brief announcement about the upcoming JARSFEST and indicated that a few tickets were available.

A discussion surrounding the TEARA hamfest took place with Bill Sellers - KD4SDK advising the members as to what will be involved. Bill was asked to provide a list to indicate where help would be needed to assist him with the Hamfest. Bill finished with a Treasurer's report.

The next item on the agenda was an update by Dave -WB4IUY concerning the repeaters and progress on getting them linked.

Gladys - KD4PMA discussed the Christmas party. She presented to the members the cost of the dinner. Additionally, some discussion surrounded whether or not gifts or a contribution to a needy cause would be done. A motion was made concerning cost, seconded and a passing vote made. Members decided to bring a gift or a food item to the dinner. RSVP will be sent to all members to be returned to Gladys ASAP. Members will receive a RSVP invitation as a separate mailing which must be returned by the date shown.

The final item on the agenda was provided by the 1994 Officer Nominating Committee. The

members selected for 1994 Officers and the positions they were nominated for are:

President: Holt Thorton - AC4UD

V. President: Chris Medico - KC4YLE  
Joe Motola - N8RQR

Treasurer: Bill Sellers - KC4SDK  
Eddy McKeel - KD4VPQ

Secretary: Gladys Tallant - KD4PMA  
Steve Vinson - KD4WIW

If you will not be attending the December meeting, ballots can be mailed in and will be in the December newsletter. Instructions will be on the ballot. For those of you who will be attending the December meeting, please bring your ballots with you.

The Triangle East Amateur Radio Association November general meeting was closed at 21:39 hrs.

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## Happy



## Holiday !!!

*The TEARA Feedline*



# CQ..CQ..CQ

Holt Thornton - AC4UD

*Continuing From Last Month.....*

If a station is heard calling "CQ", it can be answered by giving his callsign followed by your station call. An example would be: "CQ CQ CQ this is ZK2XYZ ZK2XYZ ZK2XYZ and listening." To answer you would say, "ZK2XYZ this is AC4UD do you copy?" Give the calling station time to respond and more importantly, do not change your frequency. If everything go well you will hear, "AC4UD this is ZK2XYZ. Thank you for the call back. My name is....."

What a thrill it is to make that contact. But, what if there is not a call to answer as you tune through the frequencies of the band that you are on? Well, then based on your license class, choose a different band.

You should first ask several times if the frequency is use. If you get no response to your question... make a call. Key up your mike, speak clearly and say, "CQ CQ CQ DX CQ CQ CQ DX CQ CQ CQ DX this is AC4UD AC4UD Alpha Charlie Four Uniform Delta calling CQ DX." Release your mike PTT and start listening! Once again, it's important to wait several minutes for a response. If you don't get a response... repeat your call.

There are times that it may take thirty minutes or more of calling CQ DX on a frequency to get a response. So, patience is important.

Of course, the ultimate in DXing would be to start a "pile up" (definition: More stations responding to you calling CQ DX than your excitement can handle) on your first or second call! Chances are that will happen only once or twice in a lifetime from our location. If CW is used instead of voice, the procedure and call

remain the same but "DE" is used in place of "this is" in your addressing.

What am I using to make these contacts? Well, my station is very basic. I use a Kenwood TS520SE, with a MFJ tuner (model MFJ989C) feeding a homebrew 40 meter/15 meter dipole which is off the ground about 40 feet. I also use a homebrew 2 element 10 meter Yagi at about 35 feet above the ground. In the opinion of a lot of DXers, this is a rather poor setup, but it works. Imagine what some of the stations in the third world countries must be. I'm not trying to critique them but, our poorest equipment is better than theirs.

Several operators have either called or talked to me about DXing. And most ask one simple but, good question. "How do you call DX?"

In the November newsletter I mentioned several factors that would enhance or limit radio wave propagation. Since that time, I have received several questions about propagation. Propagation is

a subject that could take several newsletters to discuss. But, I will attempt to give you some detailed information about propagation. More than I have in previous newsletters.

Propagation is the means by which we communicate from one point to another. If you will, the movement of electromagnetic waves traveling through the earth's atmosphere. A properly designed, constructed and fed antenna is one with low power loss and with low SWR and as a result, should have high efficiency. We can now say that we feel everything is in good order so, the antenna will radiate a radio signal when it resonates at the frequency of the transmitted signal. At times however, that signal may not appear to get "out of the backyard!" A few hours later (or even a few days later), with the same equipment and local conditions, it may bring high signal reports when calling DX.

So, the question is... why does this happen? It would appear that since the equipment, etc. was the same in both cases, then the differences must be an outside factor. To explain this situation may



# 1994 Hamfest Calendar

The **FEEDLINE** assumes no responsibility for the accuracy of the listing, other than to correctly republish.

## **January 1994**

- 8th Lakeway ARC Hamfest & Computer Show  
Morristown, TN
- 15th Hamfest, Greenwood, SC
- 16th Frostfest, Richmond, VA
- 22nd TVARN Hamfest, Gallatin, TN

## **February 1994**

- 5th Hamfest, Charleston, SC
- 5th Kerbella Hamfest, Knoxville, TN
- \*12th Owensboro ARC Hamfest, Owensboro, KY
- 20th Hamfest, Elkin, NC
- 26th Hamfest, Dalton, GA
- 26th/ Great Lakes Div. ARRL Convention/Hamfest
- 27th Cincinnati, OH
- 27th 16th Annual Hamfest, Fayetteville, WV
- \*27th Vienna Wireless Society Winterfest  
Vienna, VA

## **March 1994**

- 5th Mammoth Cave ARC Ham/Swapfest  
Cave City, KY
- 12th/ Hamfest/ Computer Show
- 13th Charlotte, NC
- 19th Kennehoochee ARC, Marietta, GA
- 25th/ Hamfest
- 26th Columbus, GA
- 27th Charleston ARS Hamfest, Charleston, WV
- 27th 4th Annual DownEast Hamfest, Kingston,  
NC

## **April 1994**

- 2nd 9th Annual CARS Chesapeake "Springfest  
94" Virginia Beach, Va
- 9th Hamfest, Perry, GA
- 9th Hamfest, Oak Ridge, TN
- \*10th Hamfest, Clarksville, TN
- \*16th Hamfest, Bowling Green, KY
- 16th Six Meter AR Team Hamfest, Goochland  
Fairgrounds, Goochland, VA

- 17th NC State ARRL Convention - RARS  
Hamfest/Computer Fair, Raleigh, NC
- 29th/ 43rd Hamvention (HARA Conference &  
30th Exhibition Center) May 1st Dayton, OH
- 30th 55th Hamfest at Anderson City Fairgrounds  
May 1st Greenville, SC

## **May 1994**

- \*8th Hamfest, Medina, OH
- \*14th Hamfest, Murfreesboro, TN
- 14th/ Hamfest, TOCCOA,  
15th Hartwell, GA
- 15th TSRAC Hamfest/Computer Fair, Wheeling, WV
- 21st 33rd RVARC "Mayfest 94" (Salem Civic Center)  
Roanoke, VA
- \*22nd Jackson County Hamfest, Ripley, WV
- 28th 20th Annual DUR-Ham-Fest, Durham, NC
- 29th 2nd Annual Hamfest, Gastonia, NC

## **June 1994**

- 4th Azalea Coast ARC 2nd Annual Seafest "94",  
Wilmington, NC
- \*4th Cleveland ARC Starfest, Cleveland, TN
- 4th Amateur Radio and Computer Fair, Knoxville,  
TN
- 4th Athens RC Annual Hamfest, Athens, GA
- \*5th Ole Virginia Hams - Hamfest, Manassas, VA
- \*5th Hamfest, Humbolt, TN
- \*5th Hamfest, Muncie, IN
- \*11th Hamfest, Winston-Salem, NC
- \*12th N. KY ARC Ham-O-Rama 94, Erlanger, KY
- \*12th El Hasa Shrine Radio Unit Ham Swapfest,  
Boyd County, KY
- 18th Tenn. State ARRL Convention - Nashville ARCs  
1st Annual Hamfest, Nashville, TN
- \*18th Hamfest and Computer Fair, Bluefield, WV
- 18/19th Albany ARC Hamfest, Albany, GA

## **July 1994**

- 2/3rd West VA State ARRL Convention/Hamfest,  
Jacksons Mill, WV
- 9th NC Chapter TSRAC "Firecracker" Hamfest,  
Salisbury, NC
- \*16th Mid-Summer Swapfest, Cary, NC
- \*16th Hamfestival, Atlanta, GA
- /17th
- \*30th Hamfest, Columbus, OH

\*30th/ WCARS Asheville Hamfest, Haywood City  
/31st Fairgrounds, Asheville, NC

### August 1994

\*6th Tri-State ARA Hamfest/Computer Show  
Huntington, WV  
\*6/7th 6th Annual High Point RC Hamfest, High  
Point, NC  
\*7th Charlotte ARC - 2nd Queen City  
Hamfest/Computer Fair, Charlotte, NC  
\*7th 44th Annual Winchester Hamfest, Berryville,  
Va  
\*7th Mid-Ohio Valley ARC Hamfest, Parkersburg,  
WV  
\*7th ARRL Central Hamfest, Frankfort, KY  
\*20th Hamfest, Spruce Pine, NC  
\*21st Hamfest, Marysville, OH  
21st GCARA Hamfest, Cincinnati, OH  
\*27th Confederate Signal Corps Hamfest, Madison,  
GA  
\*28th Short Mountain Repeater Club Hamfest,  
Cedars of Lebanon, TN

### September 1994

3/4th 37th Annual Hamfest, Shelby, NC  
10th Statesboro ARS Hamfest, Statesboro, GA  
17th/ Hamfest/Computer Show,  
Virginia Beach, VA  
\*24th Lanierland ARC Hamfest, Gainesville, GA  
\*24th Danville 2nd Annual Hamfest, Danville, VA  
\*24th TARA Hamfest, Huntington, WV  
\*24th Hamfest, Cleveland, OH  
\*24th Hamfest, Louisville, KY  
/25th

### October 1994

1st Sumner City ARA Hamfest, Gallatin, TN  
\*1st 43rd Hamfest and Computer Fair, Rock Hill,  
SC  
\*2nd Hamfest, Rome, GA  
\*7/8th 41st Annual Hamfest/Computer Show,  
Augusta, GA  
8/9th Tenn State ARRL Convention/"MEMFEST  
'94" Hamfest  
Memphis, TN  
\*9th Hamfest, Maysville, NC  
\*15th Tri-Cities Hamfest, Gray, TN

\*15th CCARS Fall festival and Hamfest,  
Sanford, NC  
\*22nd Hamfest, Waycross, GA  
\*22nd Hamfest, Sumter, SC  
22nd/ Hamfest,  
23rd Chattanooga, TN  
\*29th Swapfest "94", Forest City/ Rutherford, NC  
\*29th Southern, KY AR Group 3rd Annual  
Franklin Fest, Franklin, KY

### November 1994

5th/ Ham Radio/Computer Expo "94",  
\*6th Lawrenceville, GA  
\*6th Hamfest, Concord, NC  
\*12th Hamfest & Computer Expo,  
Myrtle Beach, SC  
\*12th TVARN Hamfest, Cookeville, TN  
\*20th 6th Annual JarsFest, Benson, NC  
26th/ Hamfest  
27th Greensboro, NC

### December 1994

None to report

NOTE: Hamfests marked with an asterisk (\*) are NOT confirmed and are based on information on record from the previous years date, with no guarantee of accuracy. The 1994 Hamfest calendar reprinted with courtesy of South Eastern Repeater Association (SERA).

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## Newsline and RAIN

Dave Hockaday - WB4IUY

Amateur Radio Newsline and the Radio Amateur Information Network are now being broadcast twice weekly on 147.390+. The rebroadcasts are Tuesday night at 8:00pm (local) for the Newsline (then the usual TEARA Net at 8:30pm), then the RAIN broadcast immediately after the Net.

**CHECK IN TO THE NET!!!!** And let us know which one you like!

Many thanks to those who have helped out on the Net. Your assistance is greatly appreciated!!



be some what difficult to answer.

Radio waves are made up of two components. One is a magnetic wave and the other is an electric wave. The waves, which travel at  $90^\circ$  to each other, share one half of the transmitted power. At the start of the signal, they move in a flat plane. These waves can be focused by using directors or reflectors. Such is the case with a Yagi antenna.

In a vacuum, the speed of a radio wave is 186,000 mi./sec. (the speed of light). In air the speed is some what slower but, we will not concern ourselves with that at this point. What is important, is that the speed WILL vary based upon the material that it travels in.

Since the speed of the electron flow will vary based upon the type of material that an antenna is made of, it's preferred that aluminum, for the rigid parts of the antenna, and copper for the wire be used. These materials have good conduction and demonstrate low loss and high velocity.

The velocity factor should be considered when purchasing coax. The higher the velocity factor, the lower the loss. Thus, the better the coax is. Most dealers who sell wire have charts to help you with your wire selections. The ARRL Antenna Book is also a good reference when dealing with coax.

Radio waves may be bent after being leaving the antenna and that may not be desirable. Radio waves can be reflected by all sorts of objects, such as airplanes, road signs, trucks, buildings, trees, mountains, etc..

Radio waves may also be refracted. Refraction is what you see when you push a straight stick down into the water and it appears to bend at the waters surface. Such is the case with radio waves... even in air.

Strange results can be noticed in transmissions during a heavy rain or very cloudy conditions. But, don't try operating during a storm to check out the

theory!

The ocean (saltwater) is a good conductor. And when compared to saltwater, freshwater (rivers and lakes) are better insulators. Thus, a signal may be absorbed near saltwater and defracted near fresh water. Radio waves can be defracted due to the scatter nature of electromagnetic energy. Regardless of the best methods that we use to focus our radio energy, there will still be some scatter.

True ground waves are not very important for DXing. Ground wave communication is usually 100 miles or less. Do not confuse ground waves with radio waves that may strike or bounce off the ground. However, radio waves that bounce off the ground to return skyward again can be used for DXing.

Sky waves, waves radio waves that are transmitted into the sky, and ground waves are very helpful to DXers. Those waves that bounce off the ground and are rebounded back into the air, as well as, sky waves can be reflected back to earth by the atmosphere. The reflection of the waves back to earth is called skip. Radio waves that bounce off the ground and which are then reflected back from the atmosphere to the ground again, can travel thousands of miles. Your signal can go completely around the world, bouncing and reflecting, only to be received by you as a hollow echoing sound, seconds later.

Radio waves that strike the earth don't always bounce. Sometimes they are absorbed. A lot depends upon the angle the strike at and the media it hits, such as, rock, water, sand, etc.. Just as radio waves can be bent or reflected back to earth, they may also penetrate the atmosphere to continue their trip.

The suns ultraviolet radiation causes ionization in the earths atmosphere. Since the ultraviolet radiation varies in degrees of intensity it causes the ionization of the atmosphere to vary in intensity. As a result, several layers with varying levels of ionization are formed in the atmosphere. These layers of ionization can be both helpful and harmful.

*To be continued in next months newsletter*



# Packet...ON-LINE!!

*Gary Pearce - KN4AQ; RARS*

Eastern North Carolina packet...Hmmm! I almost used the word "packetees". Well, whatever we are, we have a new coordinating body. The name is Packet > East of NC.

About 15 of us hammered out a basic, hopefully simple, constitution at the meeting in Goldsboro on October 23rd. Thanks go to Barry N4WFU from Roanoke Rapids and the CDCC, for helping us prepare the document.

Once we "existed" we elected officers and that was it for the day.

The officers are:

President: Gary Pearce - KN4AQ, Raleigh  
KN4AQ @ N1GMV.#RTP.NC  
or Packet Cluster

V. President: Barry Evans - N4WFU, Roanoke  
Rapids  
N4WFU @ N4WFU.NC

Secretary/ John Aceti - N1GMV, Raleigh  
Treasurer N1GMV @ N1GMV.#RTP.NC

Barry is cleaning up the scribbles on his draft copy of the constitution and printed copies should be available at the next meeting. The meeting is tentatively scheduled for Saturday, January 15, 1994. He may be able to send it on the Packet Network if it isn't too big. A plug for high speed!!

From my scribbled copy, I see that there is two types of memberships, Regular and Associate, similar to the CDCC.

Regular members are Hams who "operate on a 24-hr/day basis, some type of digital networking equipment on one or more amateur radio frequencies," and they can vote.

Associate members are everyone else and they can not vote. Vague enough? Deliberately so....

Qualification for membership was a bone of contention that helped kill the two previous attempts for NC Packet groups prior to CDCC succeeding in the western part of the state.

New members will be added by a vote of the current members at the meetings. To vote in a new "Regular" member, the current members will probably be looking for someone making a serious attempt to contribute to the packet network, as opposed to someone with a personal mailbox.

However, WA3JPY, railroaded a novel idea. The Regular member could "upgrade" any Associate member to a Regular member just for being a hell-of-a-guy. That will let hams with a real interest in advancing the group hold office, even if they don't run a system. There are a few more pages to the paper work but, I'll wait for Barry to finish the "official" version.

Dues, so far, are zip. We don't have any serious expenses. Though we may pass the hat at a meeting to pay Barry for some paper and ink and John for some stamps.

For most communication, we have this wonderful Packet Mail system, both on the conventional Packet network, as well as, the Packet Cluster. Let's USE it!

We are NOT doing frequency coordination yet. Hopefully, I'll be able to appoint a coordinator at, or before, the January meeting. In the meantime, Charles - WB4WOR will help you through the CDCC's database.

We got the tedious stuff out of the way and I'll try to keep it that way. This meeting didn't have time for much else in the way of business, like doing what we got together to do - advance the Packet Network. By the next meeting we should be able to get down to that. "73" Gary - KN4AQ



## December's Meeting

The restaurant will provide a hot bar for those members who do not wish to order from the menu. You may order from the menu but, you must do so BEFORE 6:30pm. The hot bar is \$6.50/person, menu items costs are as listed on the menu.

Hot bar for December:

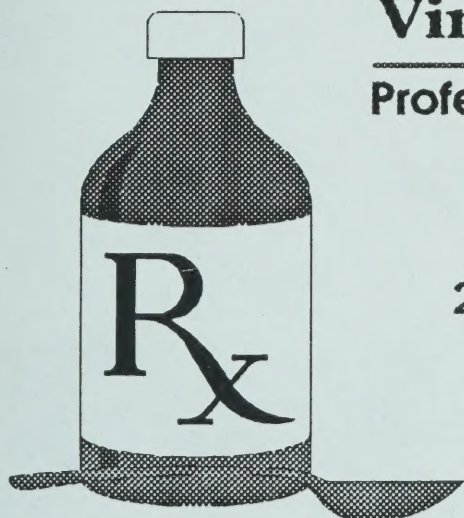
*Not available at press time.*

Keep in mind that you are on the honor system. Please remember to pay on your way out.

**ATTENTION !!!**

**Your ballot is enclosed. Return it immediately if you will not be attending the December meeting. Otherwise, please bring it with you to the meeting.**

**ATTENTION !!!**



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*Stephen Vinson R. Ph.*  
(KD4WIW)

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## **Amateur Radio - An International Resource**

### **Upcoming Events**



Have a very.....

**Merry  
Christmas!**